

ROLLAMO

1912



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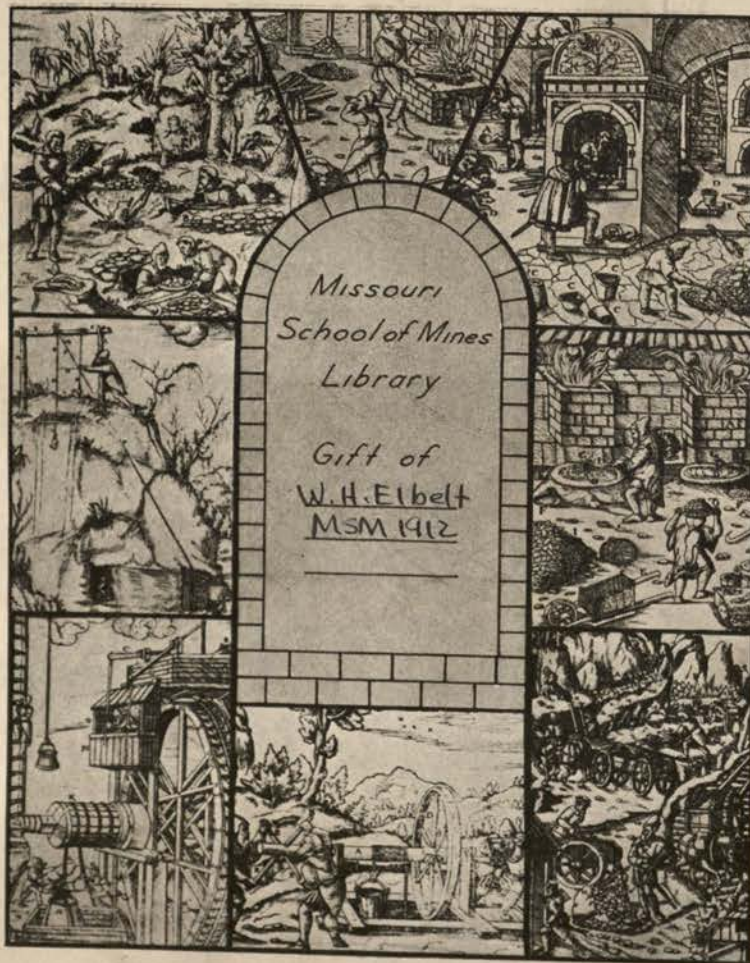
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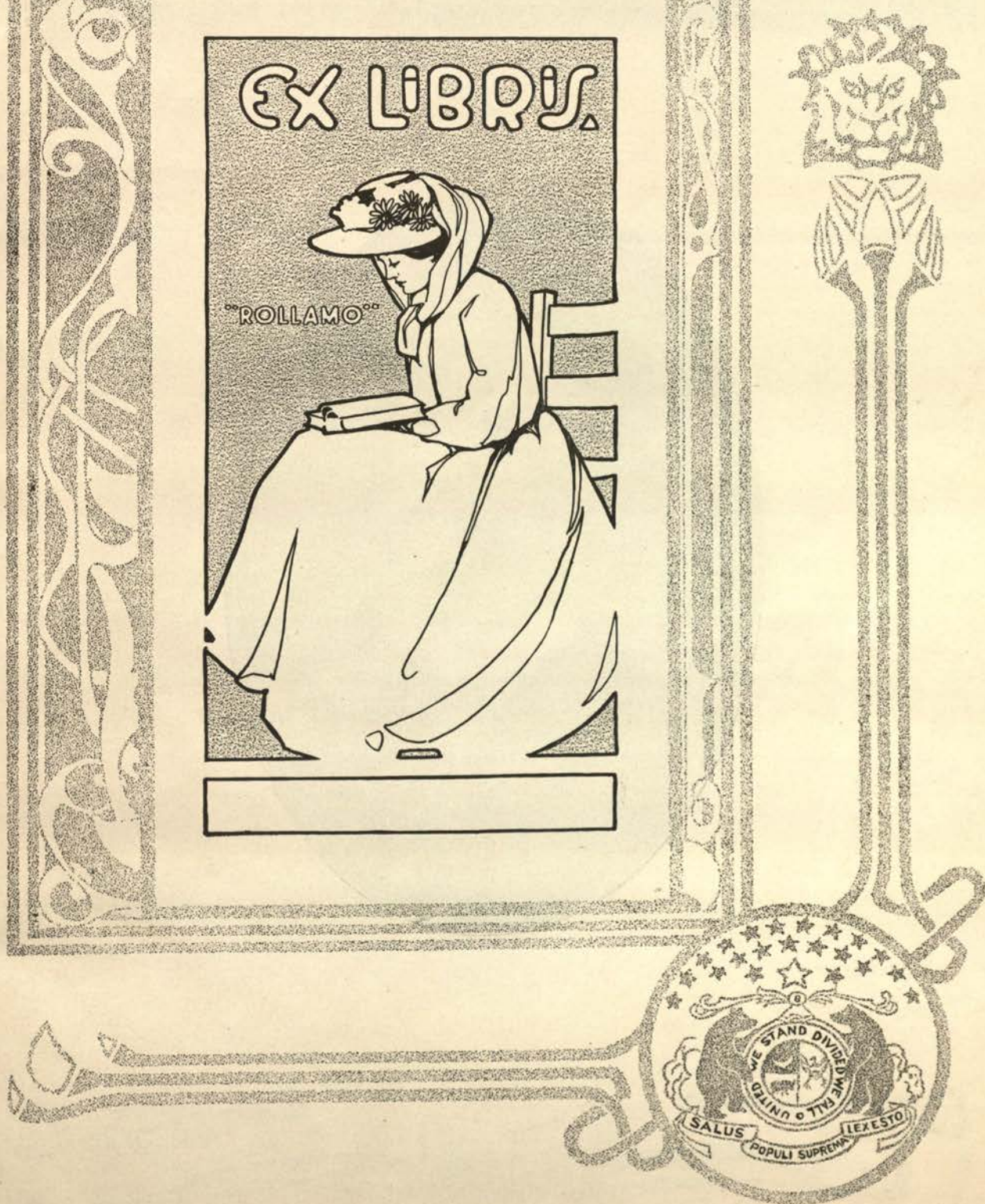


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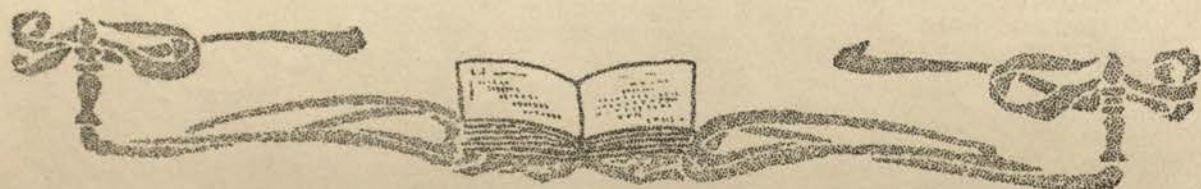
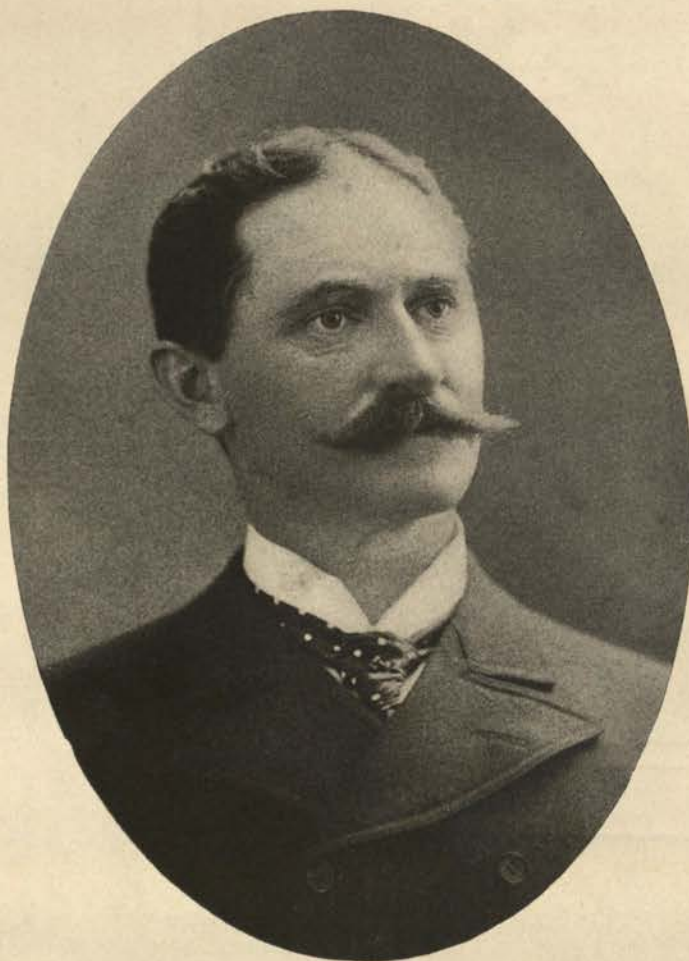
THE ROLLAMO



ROLAND



1912



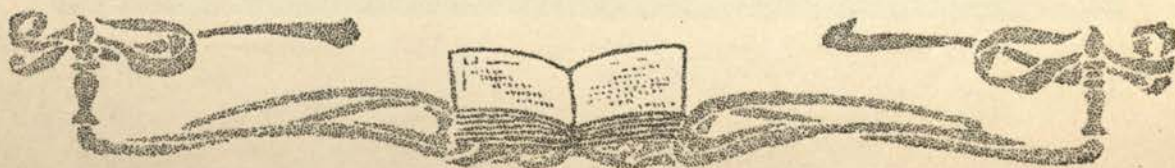


To
Gustabus A. Duncan
of the class of seventy-four

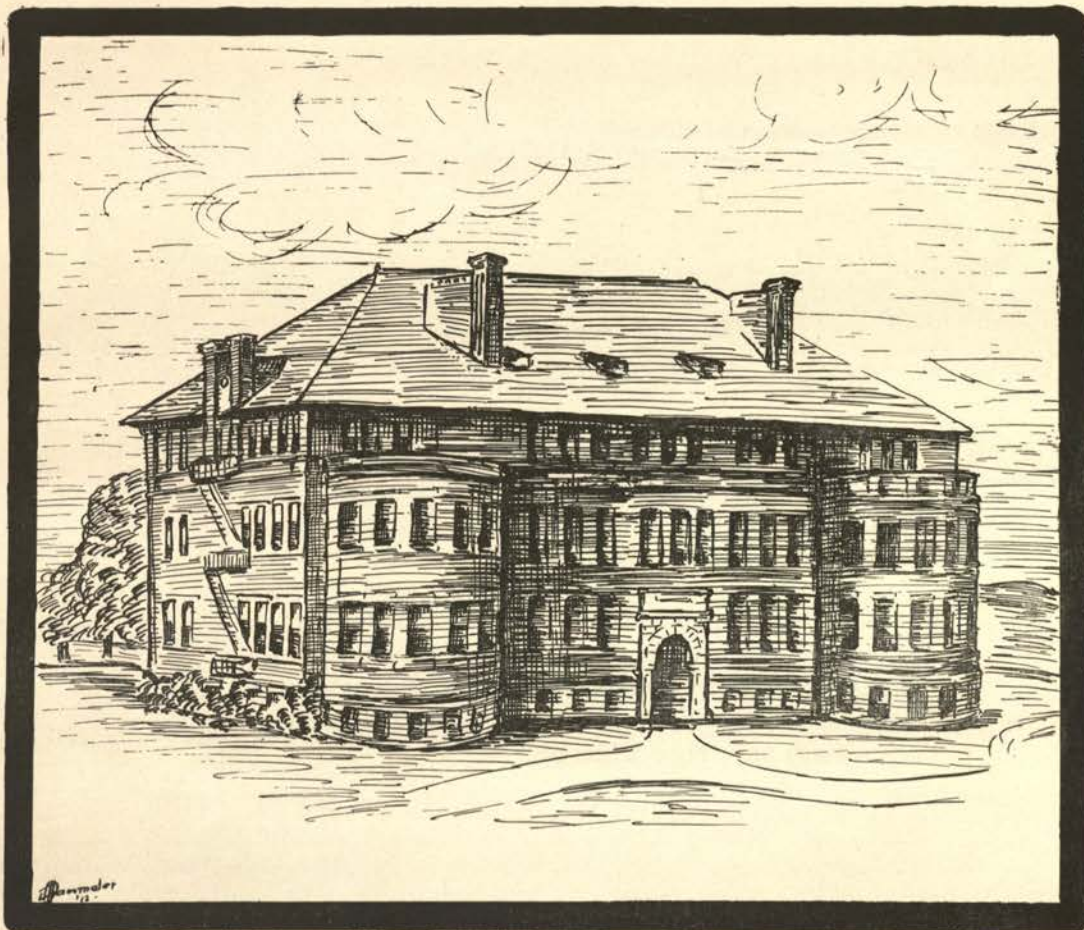
Who, because of his position as the ranking
alumnus, his success in his profession, and his
kindly interest in his Alma Mater, occupies a
foremost place in the hearts of all her loyal sons,

this book, the record of a college year, is

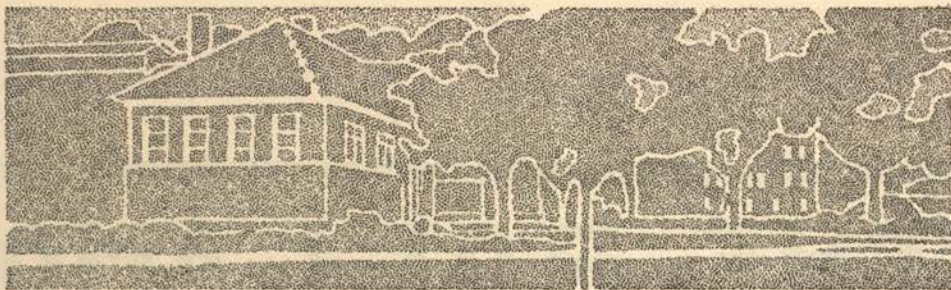
Dedicated



THE ROLLAMO

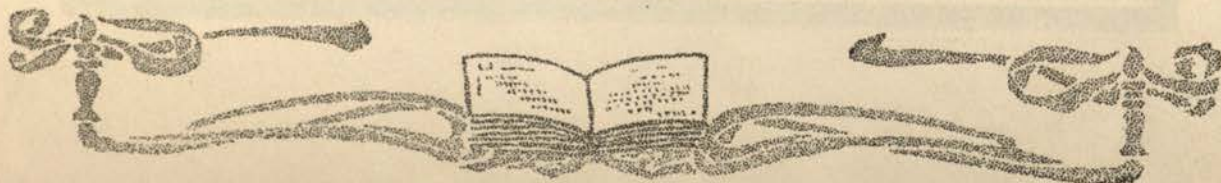


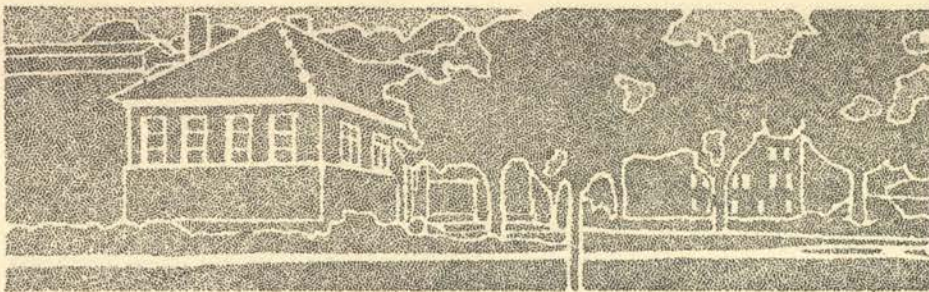
PUBLISHED ANNUALLY BY THE STUDENTS
OF THE
MISSOURI SCHOOL OF MINES AND METALLURGY
:VOL. VI~1912 ROLLA MO- VOL. VI~1912



Foreword

IT is with some misgivings that we present this the sixth ROLLAMO. We who have labored upon it are perhaps most impressed with its shortcomings. But we present it without apology, and if in anyone's opinion we have unduly criticised or unduly praised we simply ask them to remember that this book was written from the viewpoint of the student, and that if it succeeds in any measure in recording his achievements, aspirations and convictions, its purpose will have been achieved.





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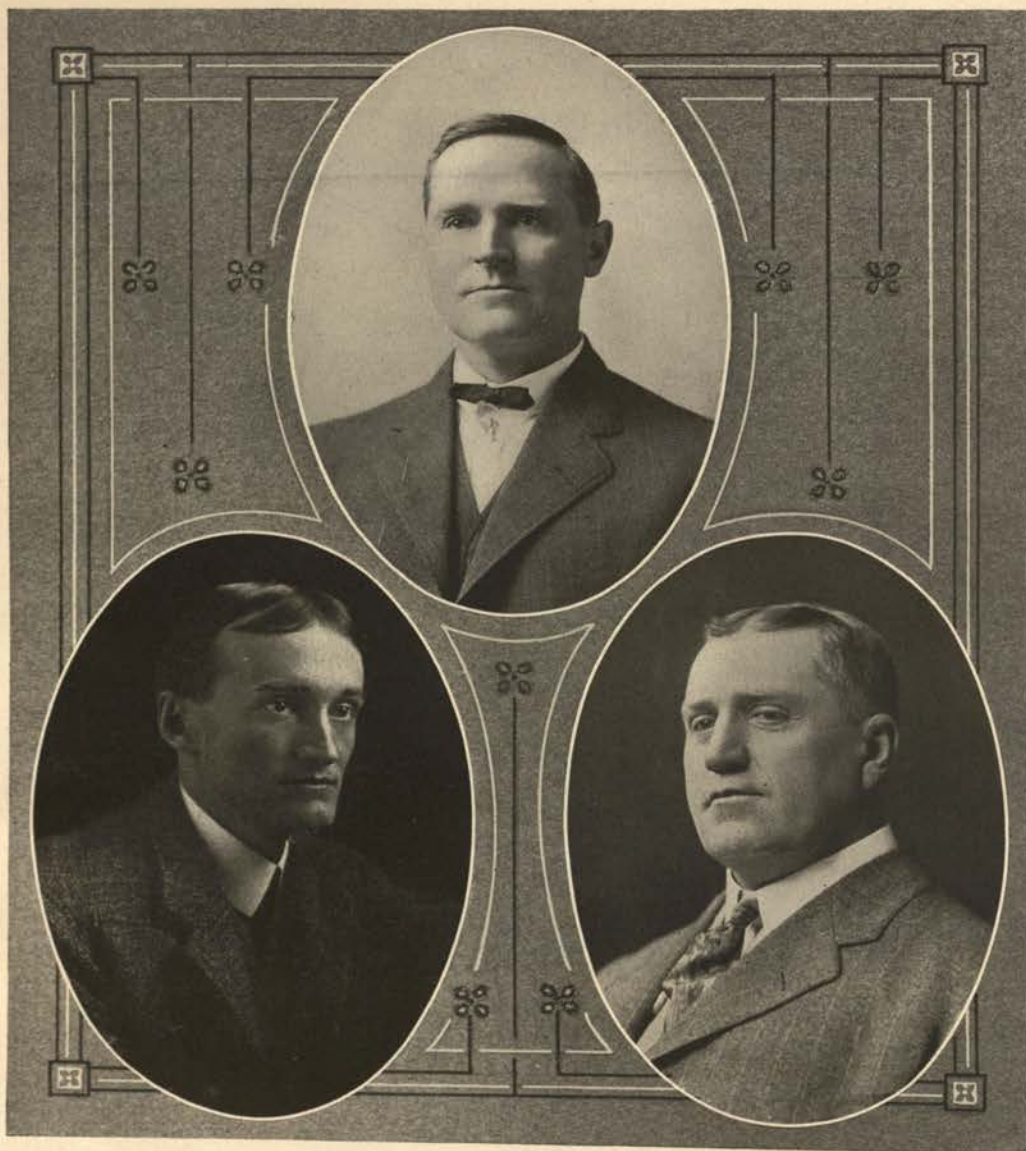




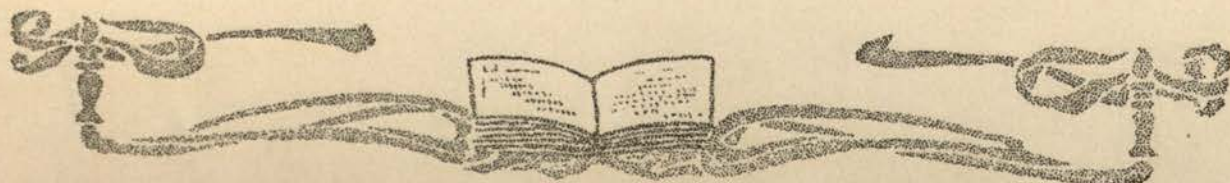
ROLLA BUILDING

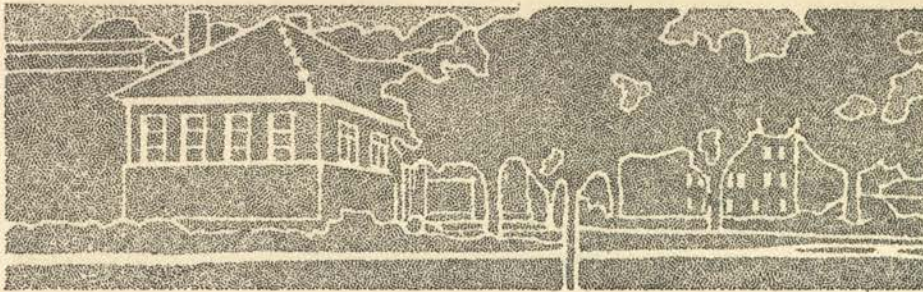


BOOK I.
SCHOOL OF MINES.



THE EXECUTIVE COMMITTEE





The Curators

D. R. Francis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	St. Louis
C. B. Rollins	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Columbia
P. E. Burton	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Joplin
J. C. Parrish	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Vandalia
S. L. Baysinger	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Rolla
C. E. Yeater	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Sedalia
T. J. Wornall	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Liberty
J. W. Swift	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Kansas City
G. L. Zwick	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	St. Joseph

The Executive Committee of the School of Mines

S. L. Baysinger

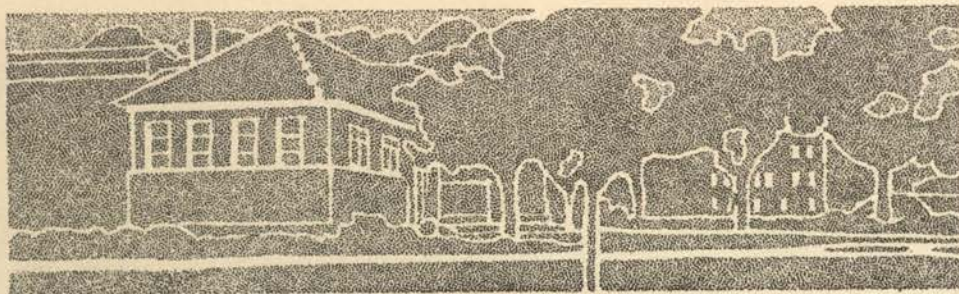
P. E. Burton

Thos. J. Wornall

Other Officers

B. L. Knapp	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Treasurer
Edwin Kahlbaum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Secretary and Registrar
Roby Dickinson	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	Superintendent of Buildings





A Historical Sketch

Taken from the address of the Hon. Thomas L. Rubey, delivered at the Fortieth Anniversary of the Founding of the School.

IN 1870 Hon. Ellis G. Evans, State Senator from Rolla, introduced and passed through the General Assembly of Missouri a bill to establish in South Missouri a mining school, to be a college of the State University. The bill provided that the school should be located in the town that gave the most in money or land. There were two contestants, Ironton and Rolla, and Rolla won.

The Board of Curators first selected old Fort Wyman as the site of the school buildings, because of its natural beauty, and the extent of the view it afforded, but practical considerations caused them to relocate the buildings in the north-western part of the town, which is the present site.

The first building, the old Rolla Building, was purchased from the school district, which had built it as a public school, and it served all the needs of the school until 1885, when the central portion of the present Chemical Laboratory was erected. This building has been subsequently enlarged by the addition of two wings and a second story. In 1889 the present director's residence was built. It was first used as a student club

house, but its use for this purpose was soon abandoned. In 1895 the power house, then known as the Metallurgical Building, was erected. This building has subsequently been greatly enlarged, the last extension having been made in 1911, when the new brick chimney and an addition to the boiler room were built. Mechanical Hall was erected in 1901 and has never been materially altered. In

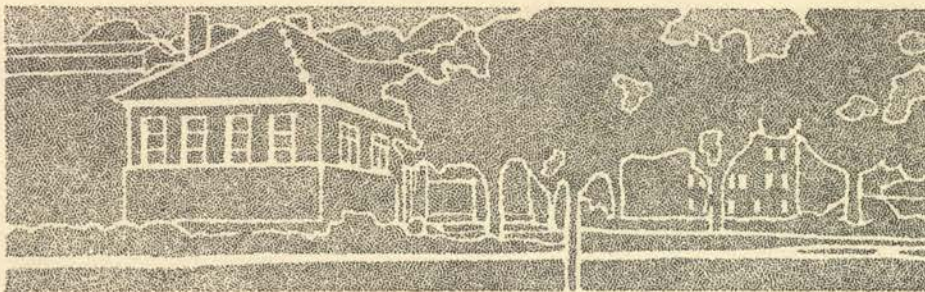


NORWOOD HALL

1902 and 1903 Norwood Hall, the principal building of the group, was erected. This building besides being the central one of the group, is the largest and most imposing and is the one by which the school is best known. The Ore Dressing Building was erected in 1908 and 1909, but the top story of the main portion was

not erected until 1911. Parker Hall is the latest addition to the buildings of the school. It will house the Library and executive offices, and will contain an adequate auditorium. It may be well here to mention the proposed Gymnasium, upon which work will be started early in the summer. It will be a modern structure containing a swimming tank, the usual gymnasium rooms and several club





rooms; this will vastly increase the feeling of good fellowship which now prevails among students and faculty. The equipment and laboratory facilities of the school have increased with the number and size of the buildings, and to-day the splendid laboratories of Chemistry, Metallurgy, Ore Dressing, Physics, Electrical Machinery, Steam, Air and Hydraulic Machinery, Geology, Mineralogy, etc., the well-equipped wood, forge and machine shops, and the extensive field equipment for land, mine, topographic and geologic surveying, place the School of Mines in the front rank of technical schools. In the near future a complete Materials Testing Laboratory will be installed supplementing the present "Cement" Laboratory; this will vastly strengthen the school in the departments of Applied Mechanics and Structural Engineering.

The first director of the school was Charles P. Williams, who served from the founding of the school in 1871 until 1877 when he was succeeded by Charles E. Wait. After Mr. Wait came William H. Echols, who served until 1891; from 1891 to 1893 the school was in charge of Elmo G. Harris; Professor Harris resigned to follow more purely technical work and is now Professor of Civil Engineering. Upon Professor Harris' resignation

Walter B. Richards was appointed and he remained until 1897, when he was succeeded by George E. Ladd, who served until 1907, when the present director, Lewis E. Young, was appointed. All the directors have been men of high ability and professional standing and the progress of the school has been continuous under their able direction.

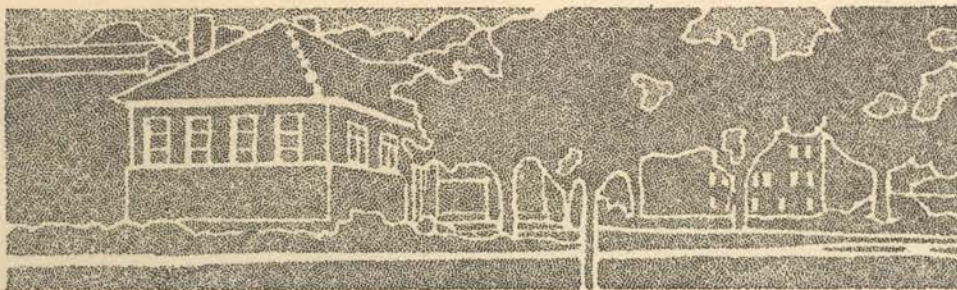
Until 1890 the school received its support from the sale of agricultural lands and the financial appropriations made by the Legislature. In 1890 the Morrill Fund was established by the National Government and since that time the school has received one-fourth of the money coming to the State from that source. In 1891 the sum of \$650,000 was paid to the State as a remuneration for loss during the Civil War; this was given by the State



VIEW OF CAMPUS

Legislature as an endowment to the University, and of the interest on this the School of Mines receives one-fifth. A little later the Collateral Inheritance Tax law passed and of this the School of Mines also receives one-fifth. It is impossible to overestimate the value to the University of this tax, and many of the buildings of the School of Mines would not have been possible without it. The Legislature has always been as liberal as possible with the institution and the appropriations





have kept pace with the growing needs of the school.

Formerly the courses offered were not so strictly technical as they now are, and many students entered to pursue academic courses; now the courses are all professional, and are rapidly being expanded to meet the growing importance of technical work. The courses now offered are Mine Engineering with broad options in Mining Geology, Mining Machinery, Coal Mining, Ore Dressing, Metallurgical Engineering, Civil Engineering and General Science. It is the hope of

every alumnus and student that these courses will be extended to provide training for students in Chemical, Ceramic, Mechanical and Electrical Engineering, for which the school's equipment is entirely adequate. Frequent changes in a faculty are to be deplored and

the school has been fortunate in this respect. The ideal now seems to be to select teachers, not so much on their scholastic or professional record as on their ability to teach. As the student is required to do more and more exact work he has a right to demand higher teaching

efficiency, and as "efficiency" is the charm-word of engineering, so "teaching efficiency" and personality that will attract, hold, and inspire the student has become the maxim of this school in selecting instructors.

The future of the institution looks bright indeed.

Its alumni

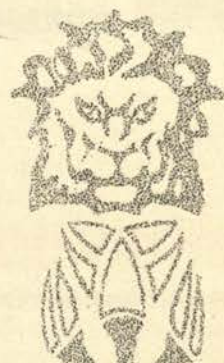
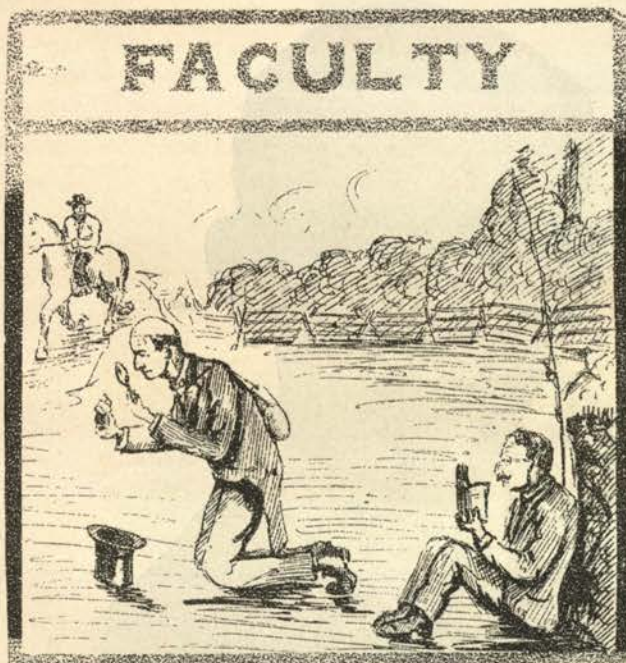
are among the leading men in the mining and allied industries. The competent faculty, splendid equipment and policy of judicious expansion are sure to keep the institution in the highest rank of Engineering Schools.

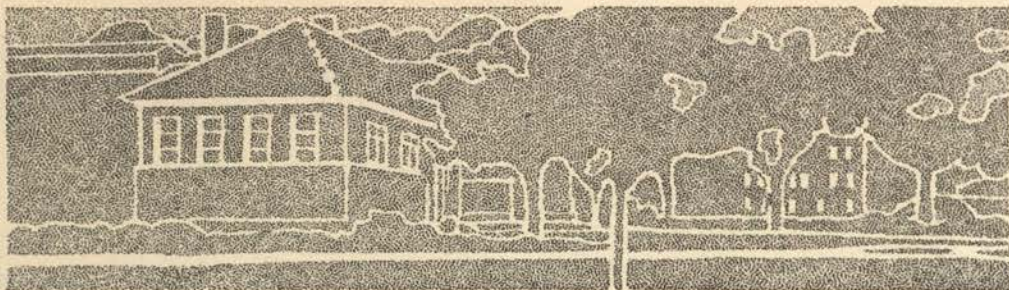


BUILDING, ETC.

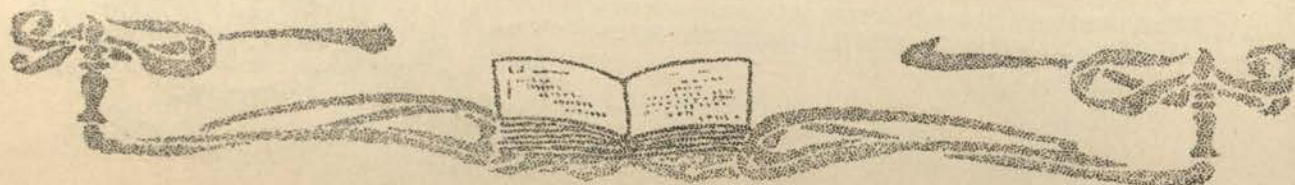


THE ROLLAMO





ALBERT ROSS HILL, A. B., Ph. D., LL. D.
President of the University.





LEWIS EMMANUEL YOUNG, E. M.,

Tau Beta Pi.

Director of the School of Mines and Metallurgy, Director of the Mining Experiment Station, and Professor of Mine Engineering.

Member American Mining Congress; Member Western Association of Technical Chemists and Metallurgists; Member Colorado Scientific Society, Member Society for Promotion of Engineering Education.

B. S., Pennsylvania State College, 1900; E. M., Iowa State College, 1904; Assistant Engineer, Pittsburgh Coal Co., 1900; Instructor in Mining, Iowa State College, 1900-01; Assistant Geologist, Iowa Geological Survey, 1901; Mining Engineer, Champion Copper Co., Painesdale, Mich., 1902; Assistant Professor of Mining, Colorado School of Mines, 1903-04; Professor of Mining, Colorado School of Mines, 1904-07; Consulting Mining Engineer, Denver; Director of the School of Mines and Metallurgy, 1907; Director of the Mining Experiment Station, 1909.





GEORGE REINALD DEAN, C. E.,
Tau Beta Pi,
Professor of Mathematics.

Member American Mathematical Society;
Member St. Louis Academy of Science.

C. E., Missouri School of Mines, 1890; B. S., 1891; Assistant in Mathematics, 1890-91; Professor of Mathematics, Maryville Seminary, 1891-92; Professor of Mathematics, Coe College, Iowa, 1892-93; Assistant in Leander McCormick Observatory, University of Virginia, 1893-94; Teacher of Mathematics, Central High School, Kansas City, Mo., 1894-97; Professor of Mathematics, Missouri School of Mines, 1897.

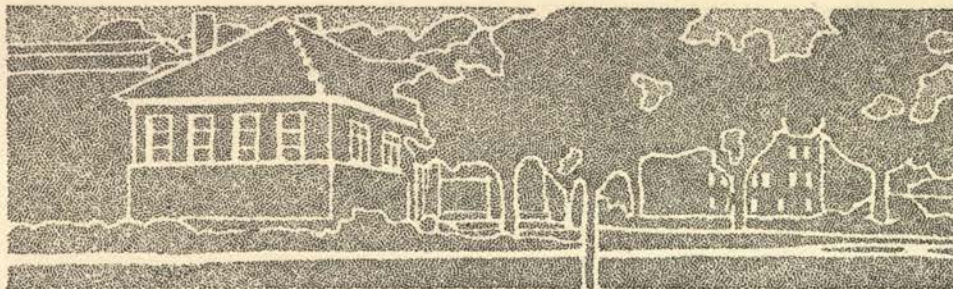


AUSTIN LEE McRAE, S. D.,
Chi Phi, Tau Beta Pi,
Professor of Physics.

Fellow American Association for the Advancement of Science.

B. S., University of Georgia, 1881; S. D., Harvard University, 1886; U. S. Signal Service (Electrical Work), 1882-89; U. S. Signal Service (Missouri State Weather Service) and Assistant Professor of Physics, University of Missouri, 1889-91; Professor of Physics, Missouri School of Mines, 1891-94; Associate Professor of Physics, University of Texas, 1894-96; Consulting Engineer, St. Louis, 1896-99; Professor of Physics, Missouri School of Mines, 1899.





VICTOR HUGO GOTTSCHALK, M. S.,
Tau Beta Pi,
Professor of Chemistry.

Member American Association for the Advancement of Science; Member American Chemical Society; Member St. Louis Chemical Society; Member Western Association of Technical Chemists and Metallurgists.

B. S., Missouri School of Mines, 1898; Assistant U. S. Assayer, Kansas City, Mo., 1898-99; Assistant in Chemical Department, Marion-Sims Medical College, 1899; Assistant in Chemistry, Missouri School of Mines, 1899-1900; Instructor of Chemistry, 1901; Student, University of Chicago, 1901; Cornell University, 1901-02; Professor of Chemistry, Missouri School of Mines, 1902.



ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

Member American Society of Civil Engineers.

C. E., University of Virginia, 1882; Practicing Civil Engineer, 1882-91; Director Missouri School of Mines, 1891-92; Professor of Civil Engineering, Missouri School of Mines, 1891-1901; Associate Professor of Civil Engineering, University of Pennsylvania, 1901-03; Professor of Civil Engineering, Missouri School of Mines, 1903.





DURWARD COPELAND, S. B.,
Sigma Rho, Tau Beta Pi,
Professor of Metallurgy.

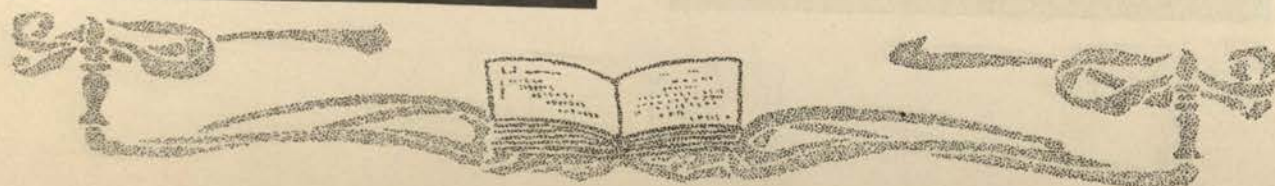
S. B., Massachusetts Institute of Technology, 1903; Assistant to Professor H. O. Hoffman and Instructor in Metallurgy, Massachusetts Institute of Technology, 1903-04; Instructor in Metallurgy and Ore Dressing, Michigan College of Mines, 1904-07; Professor of Metallurgy, Missouri School of Mines, 1907.



GUY HENRY COX, M. A., Ph. D.,
Alpha Chi Sigma, Tau Beta Pi,
Professor of Geology.

Member of California Mining Association.

B. S., Northwestern University, 1905; M. A., Wisconsin University, 1908; Graduate Student, School of Mines, University of California, 1905-06; Fellow in Geology, University of Wisconsin, 1907-08; University of Wisconsin, 1911, Ph. D.; Instructor in Geology, University of California, 1908-09; Assistant Professor of Mineralogy and Petrography, Missouri School of Mines, 1909-11; Professor of Geology, Missouri School of Mines, 1911.





LEON ELLIS GARRETT, M. S.,
Tau Beta Pi,
Assistant Professor of Mathematics.

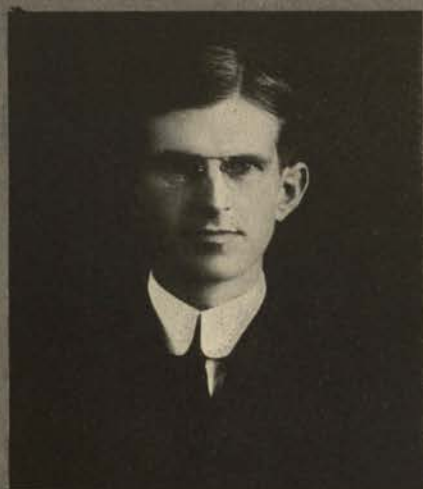
B. S., Missouri School of Mines, 1901;
Assistant in Mathematics, 1901-03; M. S.,
Missouri School of Mines, 1903; Instructor in
Mathematics, Missouri School of Mines, 1903-
06; Assistant Professor of Mathematics, Mis-
souri School of Mines, 1906-11; Student,
University of Wisconsin, 1911-12; Assistant
Professor of Mathematics in Charge of Me-
chanics, 1911.



JOSEPH HENRY BOWEN,
Assistant Professor of Shop Work and
Drawing.

Student Miller School, Va., 1890-95; Rhode
Island School of Design, 1896-97; Machinist
for Henry Blundell & Co., Providence, R. I.,
1896-97; Machinist, 1897-98; Machinist and
Inspector for Providence Engineering Works,
Providence, R. I., 1898-99; Foreman, Brown
& Sharpe Mfg. Co., 1899-1900; Designing
Special Tools and Fixtures for Providence
Engineering Works, 1900-02; Instructor in
Shop Work and Drawing, Missouri School of
Mines, 1902-06; Assistant Professor of Shop
Work and Drawing, 1906.





CARROLL RALPH FORBES, E. M.,
Sigma Rho, Tau Beta Pi,
Assistant Professor of Mining.

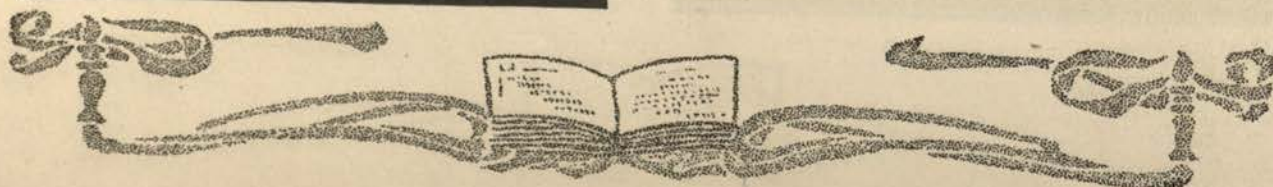
B. S., Michigan College of Mines, 1902;
E. M., 1903; Assistant in Mechanical Engineering, Michigan College of Mines, 1901-02;
Assistant in Mining Engineering, 1902-03;
Engineer of Victoria Copper Mining Co., Rockland, Mich., 1903-06; Mining Engineer, Michigan Copper Mining Co., Rockland, Mich., 1906-07; Engineer, Nevada Smelting and Mines Corporation, Tonopah, Nev., 1907; Assistant Superintendent, Nevada Douglas Copper Co., Yerington, Nev., 1908; Graduate Student, Missouri School of Mines, 1908-09; Assistant Professor of Mining, Missouri School of Mines, 1909.

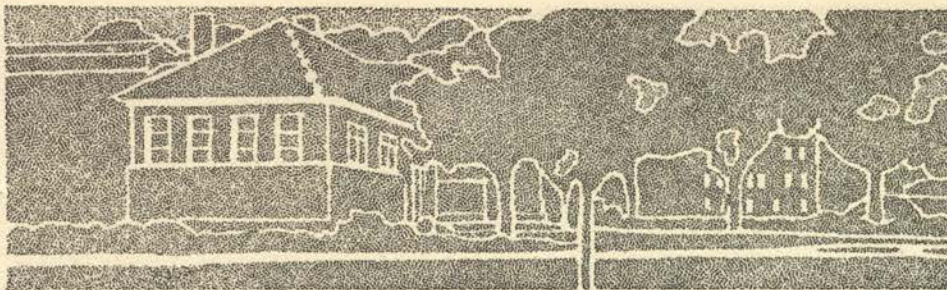


LOUIS AGASSIZ TEST, A. C., Ph. D.,
Sigma Xi, Tau Beta Pi,
Assistant Professor of Chemistry.

Member American Chemical Society; Member American Association for the Advancement of Science; Member Copper Club; Member American Ornithologists' Union.

B. S. in Mechanical Engineering, Purdue University, 1894; A. C., 1896; Ph. D., University of Chicago, 1907; Graduate Student, University of Chicago, 1901-02; Assistant in Chemistry, Purdue University, 1896-97; Assistant Chemist, Colorado Agricultural Experiment Station, 1897-1901; Instructor in Chemistry, Purdue University, 1903-06; Professor of Chemistry, Occidental College, Los Angeles, Cal., 1907-09; Assistant Professor of Chemistry, Missouri School of Mines, 1909.





JULIUS WOOSTER EGGLESTON, A. M.,
Xi Gamma, Phi Beta Kappa,
Assistant Professor of Geology and
Mineralogy.

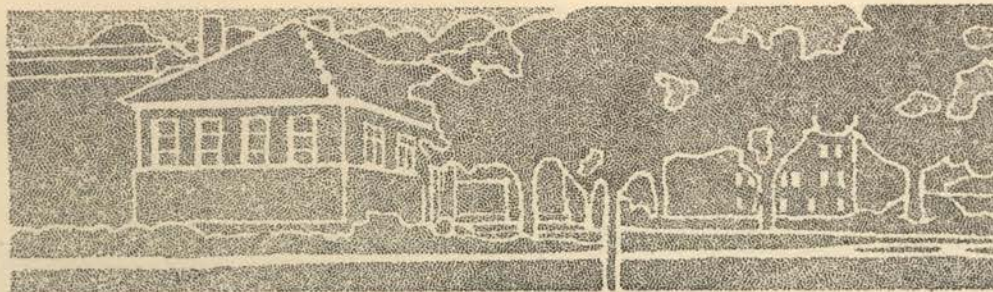
B. S., Amherst College, 1898; A. M., Harvard University, 1901; Instructor in Geology and Mineralogy, Colorado School of Mines, 1901-05; Assistant in Geology, Harvard University, 1905-08; Instructor in Geology, Harvard University, Summer School, 1906; Assistant in Economic Geology, Harvard University, 1909-10; Assistant Professor of Geology and Mineralogy, Missouri School of Mines, 1910.



HORACE THARP MANN, E. M., M. S.,
Pi Kappa Alpha, Tau Beta Pi,
Instructor in Metallurgy.

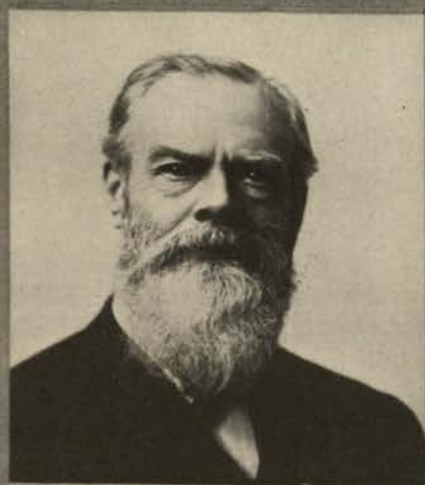
B. S. in Mining Engineering, Missouri School of Mines, 1908; M. S., Missouri School of Mines, 1909; E. M., Missouri School of Mines, 1901; Instructor in Metallurgy, 1908.





JOHN BENNETT SCOTT, B. S.,
Instructor in English.

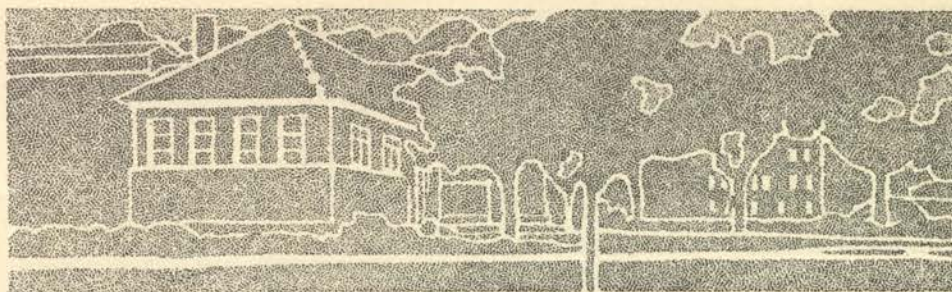
B. S., Missouri School of Mines, 1907;
Instructor in English, Missouri School of
Mines, 1897.



PAUL JULIUS WILKINS, B. S.,
Instructor in Modern Languages.

B. S., Michigan Agricultural and Mechan-
ical College, 1869; Instructor in Modern Lan-
guages, Missouri School of Mines, 1877.





VACHEL HARRY McNUTT, B. S.,
Instructor in Mineralogy.

B. S., Missouri School of Mines, 1910;
Instructor in Mineralogy, Missouri School of
Mines, 1910.



FRANK EDWARD DENNIE, B. S. in C. E.
Theta Delta Chi,
Instructor in Civil Engineering and Physical
Training.

B. S. in C. E., Brown University, 1909;
Instructor in Civil Engineering and Physical
Training, Missouri School of Mines, 1909.





FREDERICK WILLIAM BUERSTATTE,
B. S. in M. E.,
Instructor in Mechanical Drawing.

B. S. in M. E., University of Wisconsin, 1901; Apprentice, Mechanical Department, Chicago and Northwestern Railroad, 1901-05; Draftsman, Railway Appliance Co., 1905; Draftsman, Keystone Harvester Co., 1906; Chief Draftsman, Manchester Sargent Co., 1906-07; Chief Draftsman, American Well Works, 1907-09; Instructor in Mechanical Drawing, Missouri School of Mines, 1909.



HERBERT ARNO ROESLER, E. M.,
Tau Beta Pi,
Instructor of Ore Dressing and Metallurgy.

B. S., Missouri School of Mines, 1903; E. M., 1905; Assistant in Chemistry, Missouri School of Mines, 1903-04; Laclede Gas Light Co., St. Louis, Mo., 1904-05; Consolidation Coal Co., Fairmont, W. Va., 1906-10; Fairmont Mining Machinery Co., Fairmont, W. Va., 1910-11; Carnegie Steel Co., Youngstown, Ohio, 1911; Instructor in Ore Dressing and Metallurgy, 1911.





RALPH DARE BROWN, A. B.,
Instructor in Civil Engineering.

A. B., Miami University, Oxford, Ohio, 1904; Professor of Mathematics North East Ohio Normal College, 1904-06; Assistant Engineer with B. & O. and C. & C. Rys., 1907-09; Student in Civil Engineering, Ohio State University, 1909-11; Assistant Engineer and Draftsman with O'Gara Coal Co., Harrisburg, Ill., and Cambria Steel Co., Johnstown, Pa., 1911; Instructor in Civil Engineering, Missouri School of Mines, 1911.

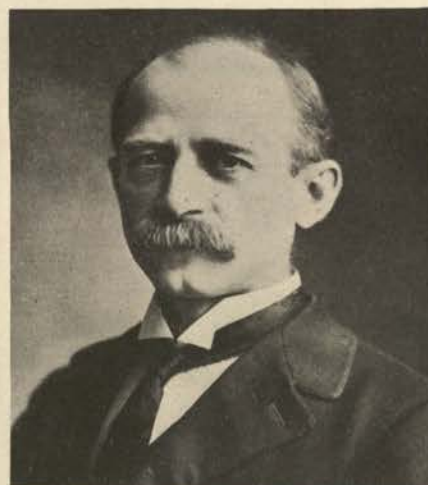


IDA STEVENS GARRETT,
Librarian.





KATHERINE FLOSSIE WYNN,
Assistant Librarian.



EDWIN KAHLBAUM,
Registrar.



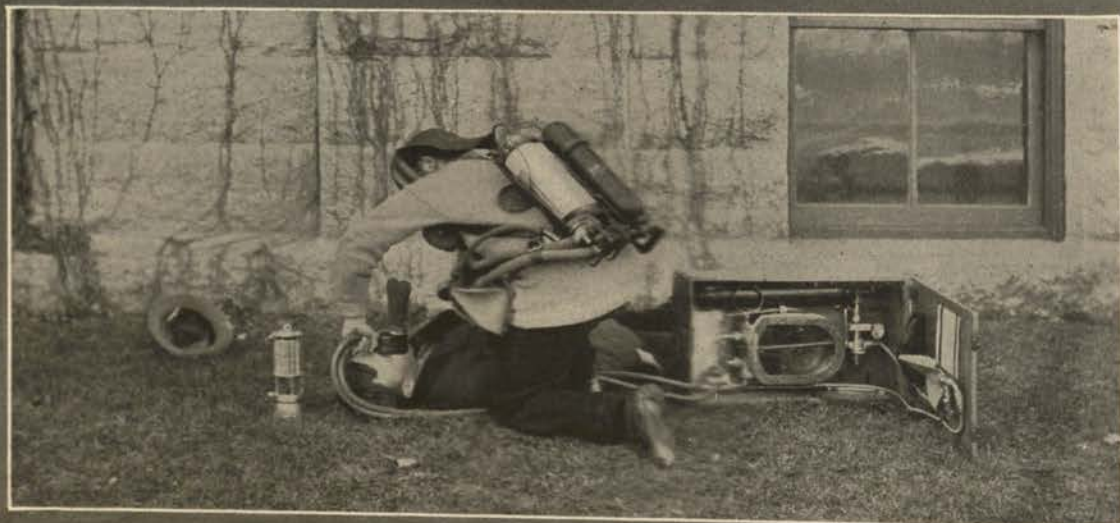
ROBERT R. DICKERSON,
Superintendent of Buildings and Grounds.



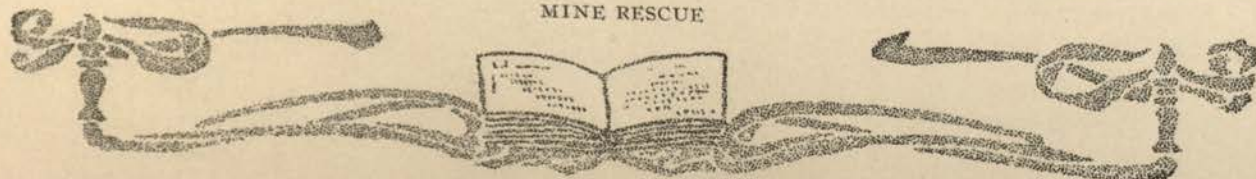
MISS R. HALEY,
Stenographer.



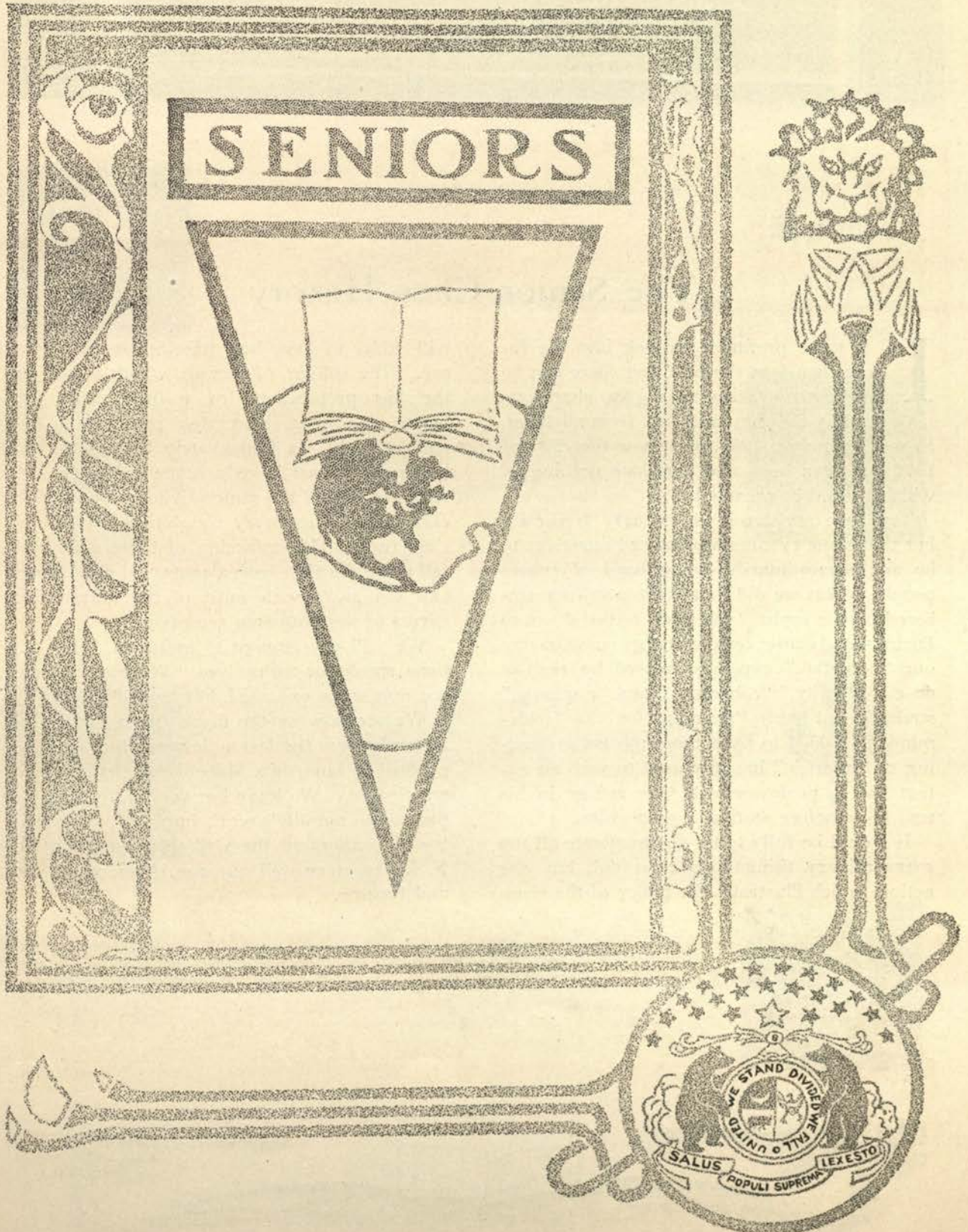
BOOK II.
THE CLASSES.

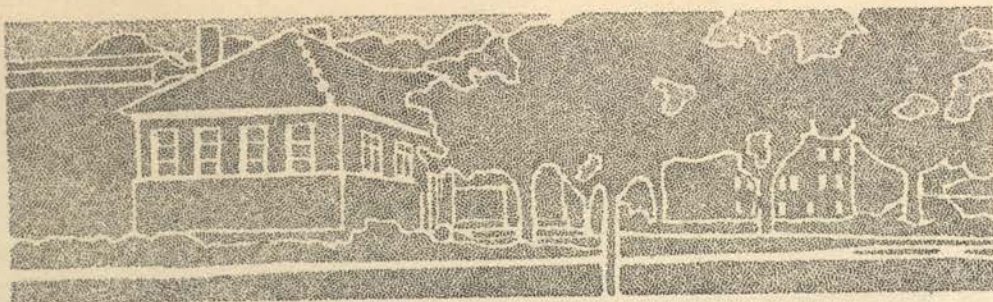


MINE RESCUE



THE ROLLAMO





The Senior Class History

IT is more profitable to look into the future than into the past, but there can be no loss in reviewing a past characterized by industry and free from mistakes. From September, 1908, until now the class of 1912 has been busy and has done nothing of which it need be ashamed.

True, we registered as ordinary freshmen, but that same evening we showed ourselves to be an extraordinarily active band of young people. What we did that night is still remembered by the sophs. We soon settled down to business and conserved our energy; until to-day our "potential," carefully nursed by regular doses of "unity," "coherence," and "emphasis," strengthened with "formulae for the feeble-minded," added to by a thorough understanding of "calories," has increased to such an extent that a professor will take refuge in his text-book before stating a proposition.

It would be folly to try to enumerate all the extraordinary things this class did, but one action, which illustrates the policy of the class,

will suffice to show how unselfish its members are. The subject of hazing, which is one of the big propositions of to-day, came up. When the proposition was put before the student body, we immediately became active, had rules passed by which the freshmen and sophomores had the same privileges and which eliminated unnecessary roughness during the class rush. The enforcing of these rules last fall made the class rush a contest of clean sport and did away with most of the undesirable events of the freshmen reception.

We will not attempt to moralize. Our actions speak for themselves. We expect them not only to be endorsed, but also imitated.

We are now on the home stretch. We reluctantly pass the last milestone, for we have profited by our Alma Mater more than we had anticipated. We leave her very walls; but we pass on to our life's work inspired by the hallowed memory of the well-spent years in M. S. M. to serve well our age if not win fame and fortune.





HENRY FARNUM ADAMS
Prescott, Ariz.
Mine Engineering
Grubstaker
Mining Association
Athletic Association
Q. V.

Seniors



OSCAR NICHOLAS BRIBACH
St. Louis, Mo.
General Science
Lucky Strike
Mining Association
Athletic Association
Business Manager Rollamo, 1912



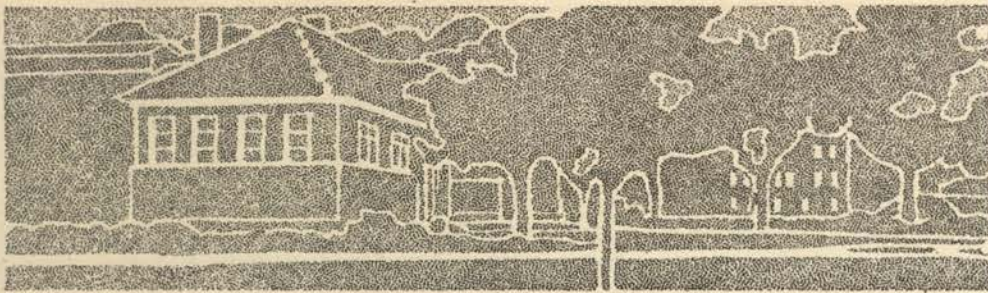
EUGENE HARDING BROUGHTON
Jefferson City, Mo.
Mine Engineering
Pi Kappa Alpha
Tau Beta Pi
Mining Association
Athletic Association
Student Council
Treasurer Rollamo, 1912



1912

SCOTT DAVID CALLAWAY
Nevada, Mo.
General Science
Alpha Tau Omega
Athletic Association
Missouri University, 1908.
University of Michigan, 1910-'11.





JAMES HOWARD CHASE
Logansport, Ind.
General Science
Sigma Nu
Secretary Mining Association
Athletic Association

Seniors



GEORGE CONDON
Butte, Mont.
Metallurgy
Kappa Alpha
Mining Association
Athletic Association
Montana School of Mines, 1-2-3



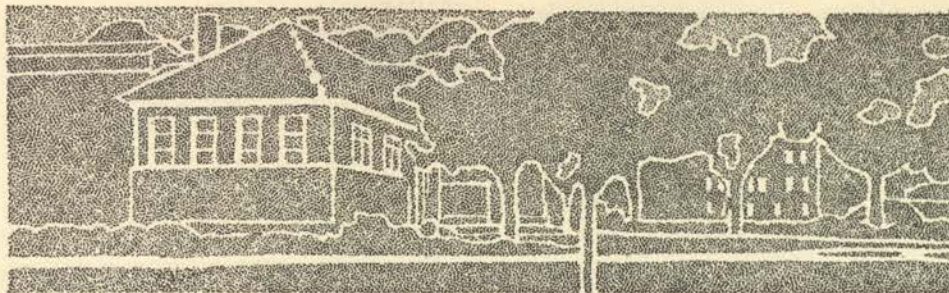
CAIRY C. CONOVER
Carrollton, Mo.
Mine Engineering
Tau Beta Pi
Lucky Strike
Mining Association
Vice-President Y. M. C. A.
Athletic Association



1912

CLIFFORD LEROY CONWAY
Hampton, Iowa
Mine Engineering
Kappa Alpha
Athletic Association
M, in Football, 3 and 4





LOUIE LINCOLN COOVER
Springfield, Mo.
General Science
Kappa Alpha
Treasurer Rollamo, 1911

Seniors

ARTHUR HARRISON CRONK
Omaha, Neb.
Mine Engineering
Tau Beta Pi
Lucky Strike
Mining Association
Athletic Association
Student Council

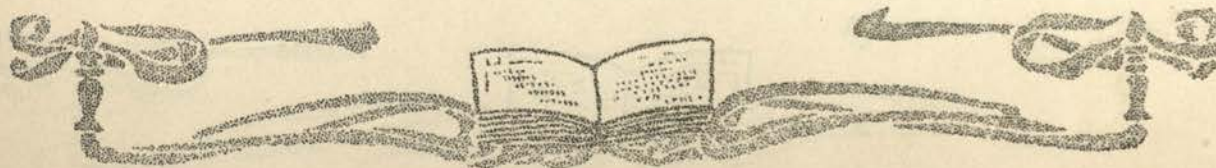


ROBERT EMMETT DYE
Joplin, Mo.
Mine Engineering
Lucky Strike
Mining Association
Athletic Association
M, in Football, 1910



1912

WILLIAM HENRY ELBELT
St. Joseph, Mo.
Mine Engineering
Mining Association
Secretary Athletic Association
Secretary Rollamo, 1912





HAROLD PERCY FORD
St. Joseph, Mo.
Mine Engineering
Tau Beta Pi
President R-Way
President Y. M. C. A.
Mining Association
Athletic Association
Assistant in Physics, 1912

Seniors



WALTER BERRY GRAY
Louisiana, Mo.
Mine Engineering
Tau Beta Pi
Lucky Strike
Y. M. C. A.
Student Council
Mining Association

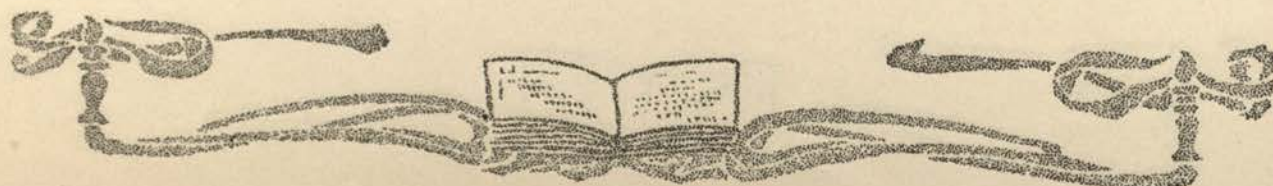


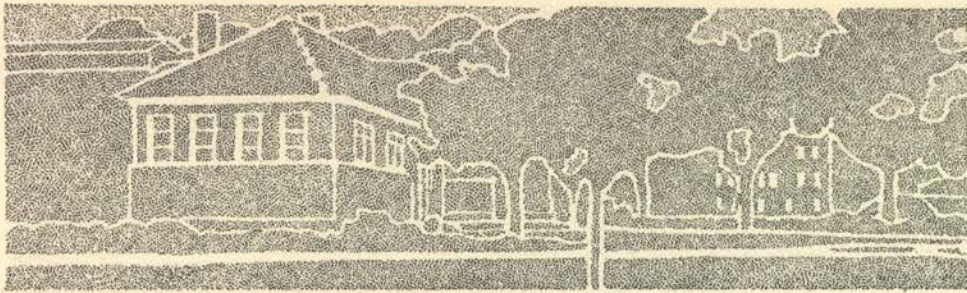
ALEXANDER GROSBERG
St. Louis, Mo.
General Science
R-Way
Athletic Association
Assistant in Chemistry, 1912



1912

ARTHUR WELLESLEY HACKWOOD
Wentworth, Mo.
Mine Engineering
Kappa Sigma
Treasurer Athletic Association, 1912
Athletic Editor Rollamo, 1912
Mining Association
Manager Football, 1912





DWIGHT DEAN HARRIS
Rolla, Mo.
General Science
Mining Association
Athletic Association

Seniors



DALE IRWIN HAYS
Rock Island, Ill.
Mine Engineering
Sigma Nu
Mining Association
Athletic Association



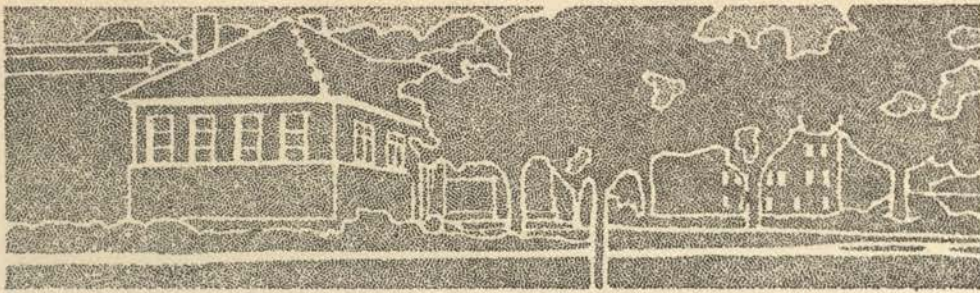
JOHN A. HIELSCHER, M. D.
Rolla, Mo.
General Science
L. E. L. Northwestern College, 1888
M. D. University of Minnesota, 1891
Mining Association
Athletic Association



1912

SCOVILL EDWARD HOLLISTER
Marshall, Mo.
Mine Engineering
Treasurer R-Way
Treasurer Y. M. C. A.
Athletic Association
M. in Football, 1911
Mining Association





JOHN HURTGEN
Rolla, Mo.
Civil Engineering
Tau Beta Pi
Athletic Association

Seniors



JOSEPH STEWART IRWIN
Louisiana, Mo.
Mine Engineering
Tau Beta Pi
Lucky Strike
Athletic Association
Art Editor Rollamo, 1912
Mining Association
M. S. M. Quartette



ROBERT WINTERS JOHNSON
Waverly, N. Y.
General Science
Sigma Nu
Athletic Association
Harvard University, 1905-'08



1912

JAMES LAWTON KEELYN
Chicago, Ill.
Mine Engineering
Kappa Sigma
Tau Beta Pi
Athletic Association
Senior Class President
Mining Association
Student Council
Virginia Polytechnic Institute, 1907
Q. V.





DUANE MONTGOMERY KLINE
Rolla, Mo.
Mine Engineering
Athletic Association
Mining Association

Seniors



EDWARD DALE LYNTON
Ipswich, England
Mine Engineering
Mining Association
Y. M. C. A.
M, in Track, 1909, '10, '11
Holds school record in cross-country run



CLYDE FRANCIS LYONS
Springfield, Mo.
Mine Engineering
Athletic Association



1912

ROSWELL HARE MAVEETY
Cincinnati, Ohio
Mine Engineering
Tau Beta Pi
Mining Association
Athletic Association
Editor-in-chief Rollamo, 1911
Cincinnati University, 1908-'09.





EDWIN ROBINSON MORRIS
Jefferson City, Mo.
General Science
Grubstaker
Athletic Association

Seniors



ARCH. WAUGH NAYLOR
Rolla, Mo.
Civil Engineering
Athletic Association
Student Council

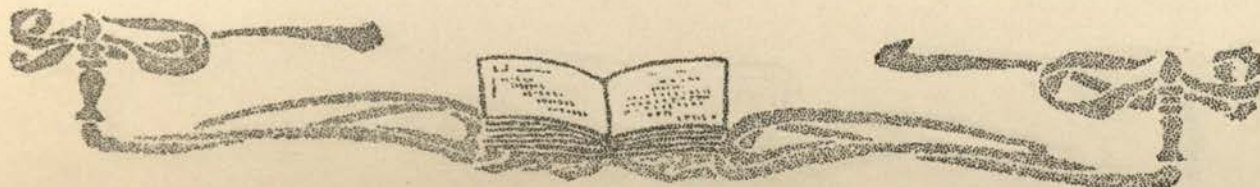


ROBERT JUSTICE PAULETTE
St. Joseph, Mo.
Mine Engineering
R-Way
Mining Association
Athletic Association
Associate Editor Rollamo, 1912
Q. V.



1912

WILLIAM PORRI
St. Louis, Mo.
Mine Engineering
Mining Association
Athletic Association
Student Council, 1911
M, in Baseball, 1909, '10, '11
M, in Basketball, 1910, '11
Captain Baseball, 1910
Captain Basketball, 1911





MARK SOIFER-SHEFFER
Mariupal, Russia
Mine Engineering
Mining Association
Athletic Association

Seniors



HOMER KENT SHERRY
Rolla, Mo.
Mine Engineering
Tau Beta Pi
R-Way
Mining Association
Athletic Association
M, in Football, 1910, '11



THOMAS ANDREW STROUP
Quincy, Ill.
Mine Engineering
Tau Beta Pi
Grubstaker
Athletic Association
Mining Association
Y. M. C. A.
Editor-in-chief Rollamo, 1912



1912

GEORGE SYLVESTER THOMAS
Evanston, Ill.
Metallurgy
Kappa Sigma
President Mining Association
Athletic Association





MARTIN HARMON THORNBERRY
Granby, Mo.
General Science
Athletic Association
Assistant in Chemistry, 1912

Seniors



MILLER EDWARD WILLMOTT
Liberty, Mo.
Mine Engineering
Kappa Sigma
Athletic Association
Mining Association
Q. V.



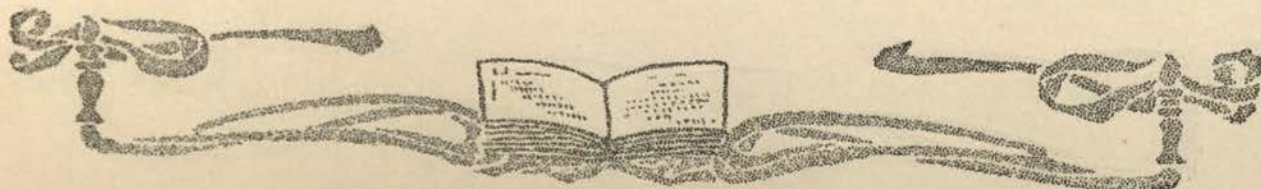
CLARK WATSON WRIGHT
St. Louis, Mo.
Mine Engineering
Sigma Nu
Mining Association
Athletic Association



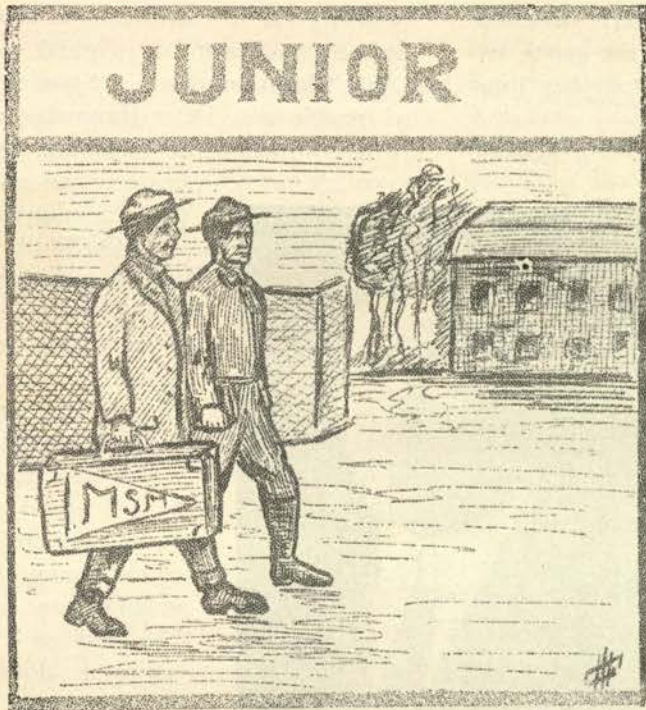
CARL DEUEL YOUNG
Fargo, N. Dak.
General Science
Sigma Nu
Mining Association
Athletic Association
M, in Track, 1909, '10, '11
Captain Track, 1912



1912



THE ROLLAMO





Junior Class History

WELL, gentlemen, three years have rolled around, but it seems only a few days since we were dropped into Rolla from different parts of the country, and were gathered together into what is now the Class of 1913.

No doubt we were a green-looking aggregation then, as all freshmen are, but nevertheless we started in to do our best, knowing that everyone who looked down upon us was himself once a freshman. When enough men had arrived we held a class meeting and elected Pitts Bland as our president; then we commenced to prepare for Green Cap Day, that day about which we had heard so much, but which we found to be not so serious after all, and after it was over we certainly felt more firmly bound together as classmates.

The first year, with its rounds of algebra, chemistry, shop, and other nightmares, interspersed with smokers, minstrels and general good times, finally rolled around.

In September of our sophomore year the regathering commenced, but this time it had a different aspect—we were now sophomores and somebody. Everyone put on a pair of corduroys and paraded up and down the street shaking hands with the old boys and sizing up likely freshmen, dropping into Charley's occa-

sionally to talk things over. This time Prof. Dean was getting busy on us, and many an hour we sat in calculus in a cold sweat while he informed us in his original manner that we "didn't know nuthin'." Spanish was a source of trouble also, Peter Jimmie's Spanish, filtered thru six inches of whiskers, was something entirely new and for the most part incomprehensible.

C. O. Smith was our sophomore president, but he was forced to leave school on account of his hearing, so at a special meeting we elected Gould Knickerbocker to fill the position.

We are now juniors and have learned to cut classes quite frequently without serious damage to our consciences, and a little matter like four or five "cons" per semester does not disturb our frequent and peaceful slumbers. The original "Old Guard" is getting smaller as the years roll around, but new men from other schools are

taking their places, so the class is as large as at entrance and has constantly maintained its standard. In student activities, athletics, minstrels, we have held our own with any class in school.

We are ready and anxious to take our place as seniors and feel ourselves competent to direct student opinion as seniors must, and in all things so comport ourselves that at least M. S. M. need not be ashamed of us.



C. Y. CLAYTON, PRESIDENT





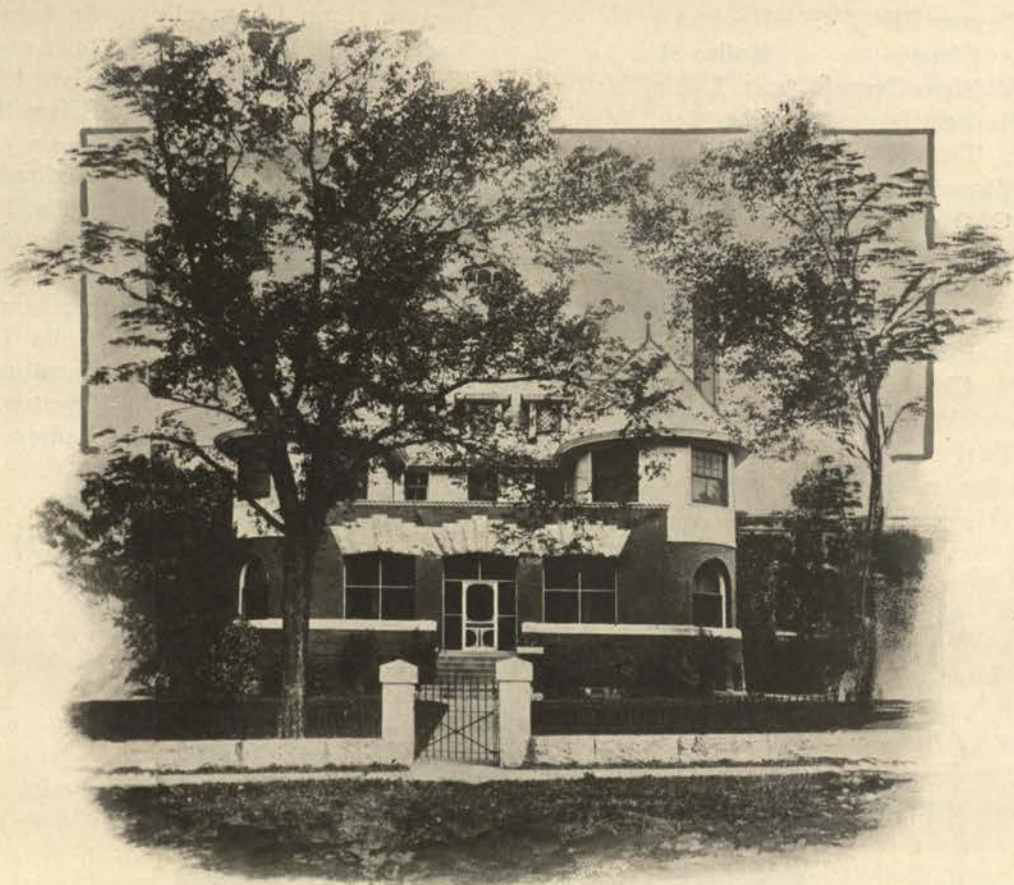
Junior Class

Andrus, Dexter Eli .	Rockford, Ill.	Ingram, John Charavelle	St. Louis, Mo.
Bramson, Charles .	Rolla, Mo.	Kadell, Carl Peter .	St. Louis, Mo.
Brewer, William Francis	St. Louis, Mo.	Knickerbocker, Ray Gould	Clymers, Ind.
Brooks, Herbert Ivey .	Sheridan, Wyo.	McBride, Roy . . .	Salesville, Ohio
Castillion, Tirso . . .	Torreón, Mexico	Marshall, Holman Thompson	Sioux City, Iowa
Cepeda, Miquel Leon .	Mapimi, Mexico	Miller, Julius C., Jr. .	Carthage, Mo.
Clayton, Charles Yancey	Hannibal, Mo.	Murphy, John Andrew	Rolla, Mo.
Cody, Frank Wesley .	St. Joseph, Mo.	Nowlan, Harry Hackett	Rolla, Mo.
Ehlers, William, Jr. .	St. Louis, Mo.	Seward, J. Frederick .	St. Louis, Mo.
Fitch, Russell Peyton .	Warrensburg, Mo.	Shaw, Harry . . .	St. Louis, Mo.
Forrest, Ralph . . .	Deleville, Ind.	Sickly, Robert Glenn .	Rolla, Mo.
Gottschalk, Charles, Jr.	Aberdeen, S. D.	Tistadt, Hugh Aubrey .	Caruthersville, Mo.
Hall, Clyde Willis . .	Moundville, Mo.	Webster, John Nixon .	Creston, Iowa
Halley, Earl . . .	Auxvasse, Mo.	Work, David Wayne .	Lamar, Mo.
Hopkins, James . . .	Ramey, Pa.		

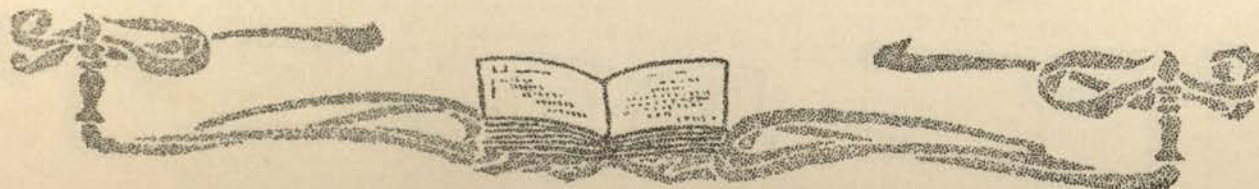


SURVEYING

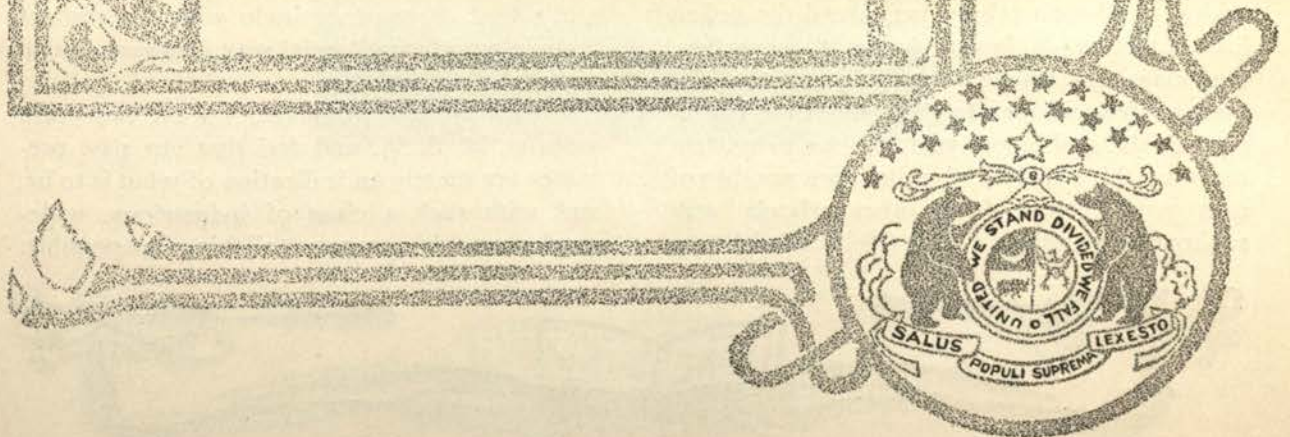
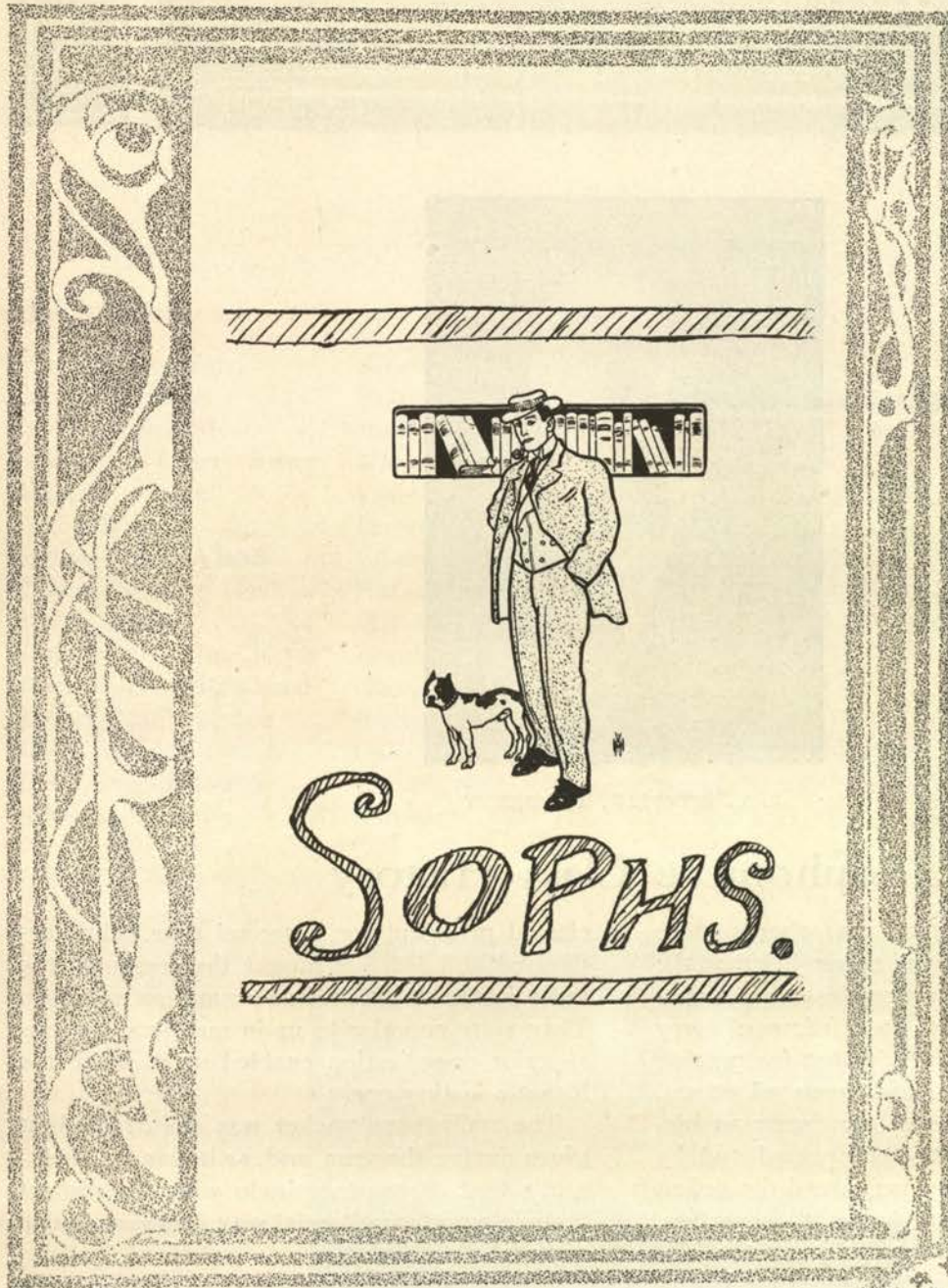


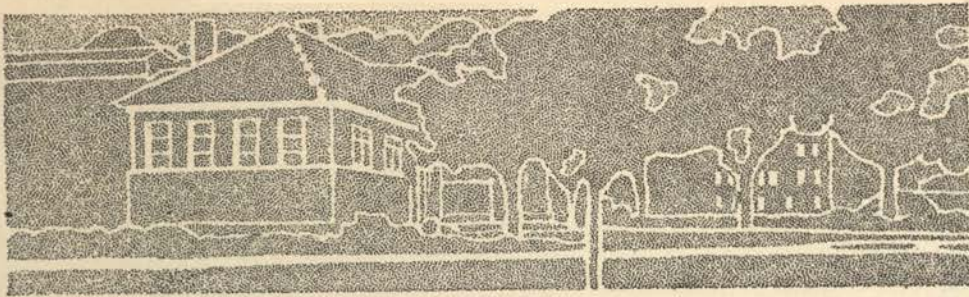


DIRECTOR'S HOUSE



THE ROLLAMO





L. L. LODWICK, PRESIDENT

Sophomore Class History

NO class in school has shown more individuality and originality than the present sophomore class; it is a conglomeration of good fellows of every sort, and it can be truly said that for putting on original stunts the class excels all others.

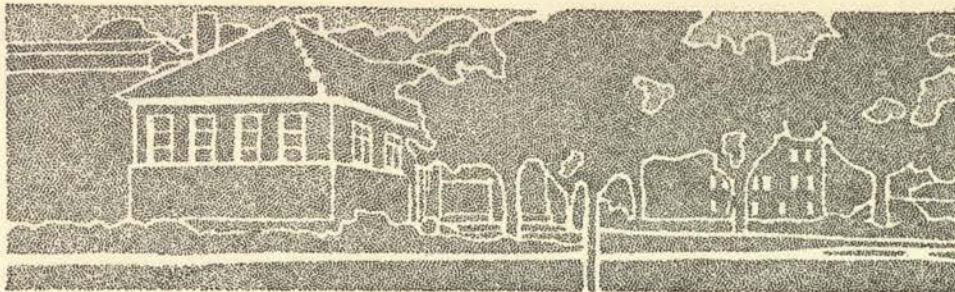
A few words will cover our freshman history. We were properly subjugated and by taking our lesson calmly we turned the defeat into a victory—a lasting lesson to ourselves. Our class was somewhat crippled by the failure of a few old men to show up at the beginning of the sophomore year, but we more than made up this deficiency by the large number of men who entered from other schools with sophomore standing. "Big Ole" Lodwick was

elected president for a second time. Thus organized and led, we taught the freshmen the same lesson that we had found so valuable. They were superior to us in numbers, but our superior organization enabled us to make the lesson a lasting one.

The sophomore smoker was one of the best given during the year, and, as it was the freshmen's first chance to mingle with the student body in an informal social way, it was a double success.

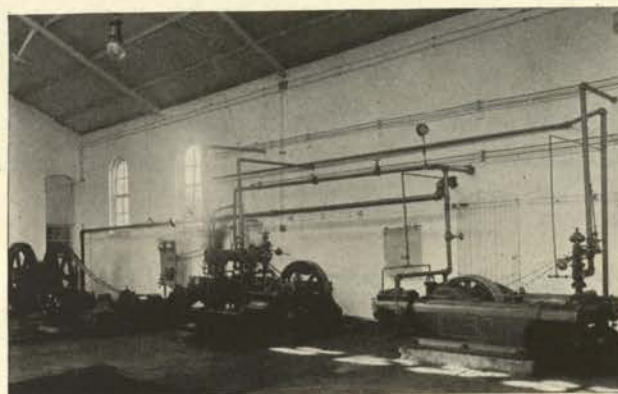
We are anxious and eager for the two years more at M. S. M. and feel that our past successes are merely an indication of what is to be, and with such a class of industrious, wide-awake, capable young men, all things are possible.





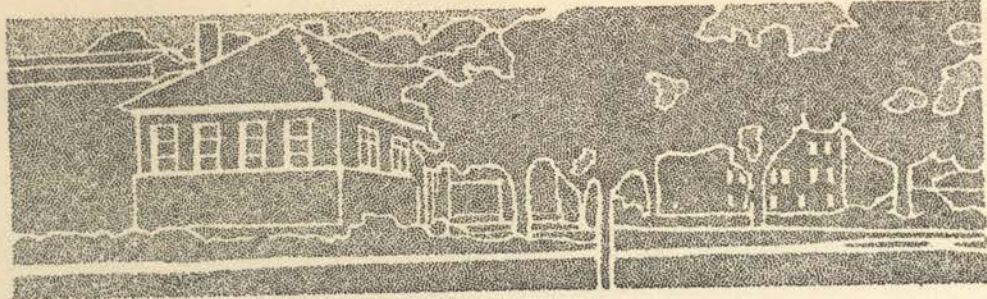
Sophomore Class

Bowman, Lee Reed .	Sikeston, Mo.	Metz, Gilvert Frank .	St. Louis, Mo.
Collins, Lawrence .	Rolla, Mo.	Moses, Frederick Gallaway	Kansas City, Mo.
Cowman, Gerard .	Bellefontaine, Ohio	Perry, Forrest George .	Creston, Iowa
Crutcher, Thomas Estus	Napton, Mo.	Pierce, Wallace .	Pringhar, Iowa
Edwards, Blaine .	Lynn, Ind.	Schmidt, John Norman .	Chicago, Ill.
Goss, Blake .	Rockville, Ind.	Pringle, Louis Braden .	Quincy, Ill.
Greene, John Wikoff .	Liberty, Mo.	Simrall, Riley Marsh .	Liberty, Mo.
Halsey, Howard Gove .	Kansas City, Mo.	Smith, Clinton DeWitt .	Austin, Minn.
Hamm, Carl .	Clifton, Ariz.	Stanley, Everett Rollins	Sedalia, Mo.
Hammond, Arthur Kepler	Bonne Terre, Mo.	Stoliker, Edmond Otis .	Creston, Iowa
Hatch, Sidney Raymond	George, Iowa	Stroup, Jacob Carl .	West Quincy, Mo.
Hoover, Louis McLin .	Rochester, Ind.	Thomas, Rae .	St. Louis, Mo.
Kelly, Mervin Joe .	Gallatin, Mo.	Thrush, Harry Alfred .	Rolla, Mo.
Koch, Hugo Edward .	Creve Coeur, Mo.	Wager, Walter Henry .	Newtonia, Mo.
Lodwick, Llewelyn .	Ottumwa, Iowa		



THE "AIR LAB"

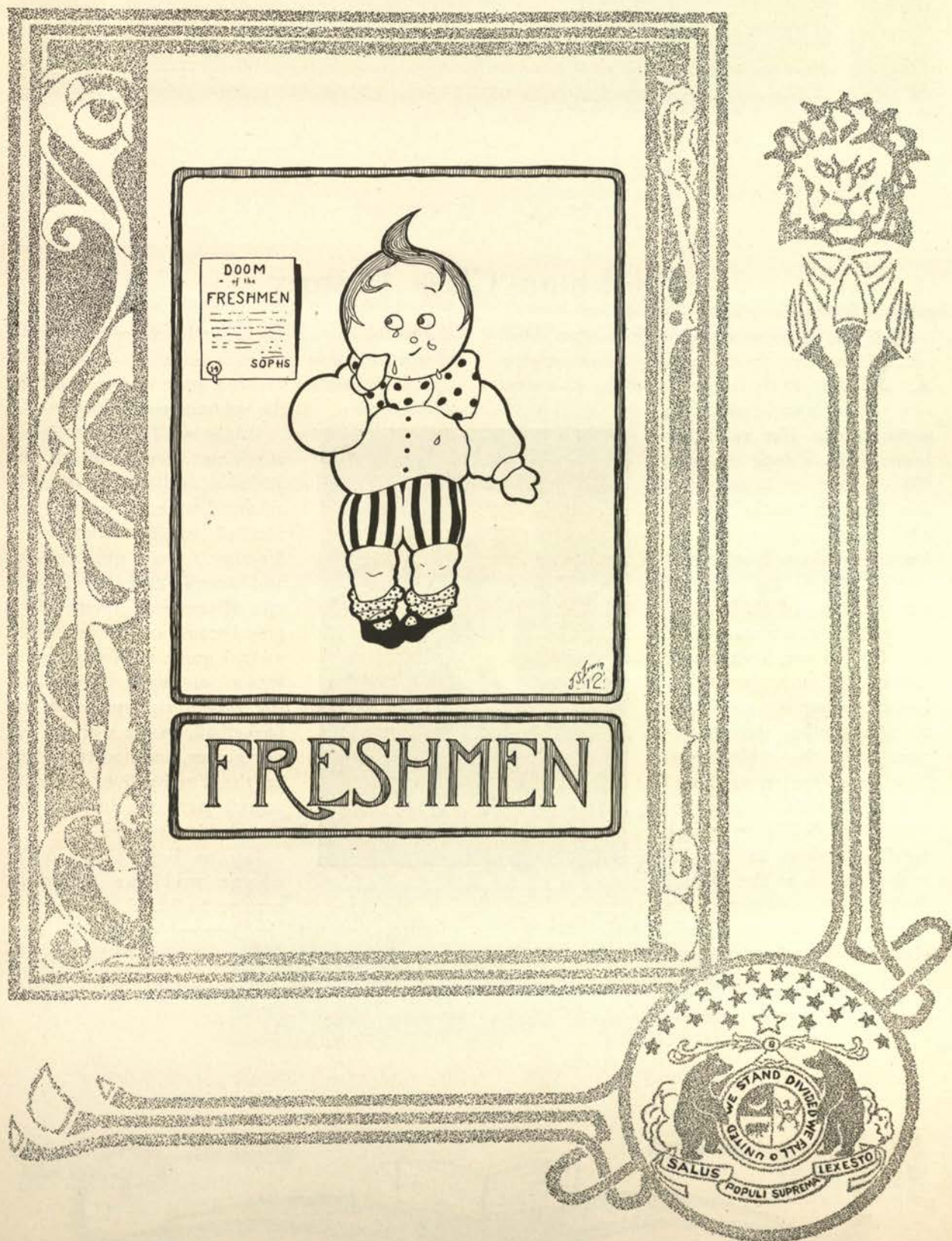




METALLURGY BUILDING



THE ROLLAMO





Freshman Class History

AS the opening week of September drew towards its close every train passing thru Rolla began to unload its cargo of students. To

some it was like returning home after a long absence. They went gayly to their familiar haunts—the frat or the old rooming place—looked up their friends and settled down for another year at dear old M. S. M.

But the newcomers did not feel so much at home. Timid and unknown, they began asking questions about what they were to expect from the sophomores. The freshmen soon found that the stunts required of them included only such mild diversions as singing and “barking at the moon.”

Our election of permanent officers was held on October 14th. We had elected Schwegler temporary president about

the beginning of school, and deferred our permanent election until this time.

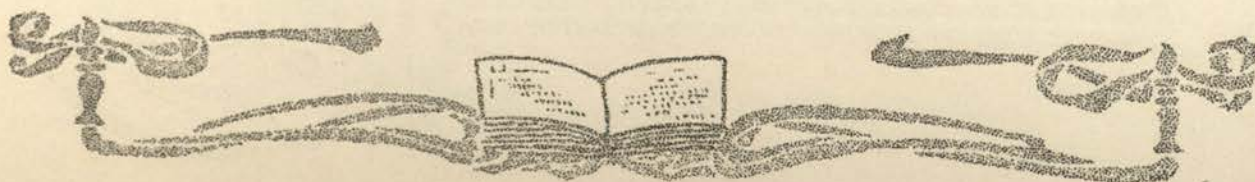
On November 25th we gave our smoker to the sophomores.



R. W. HAYDEN, PRESIDENT

While we have not done anything very brilliant in athletics, we are not all ashamed of our record. In football we furnished the Varsity a star quarterback and several other men who missed making their “M” only because of injuries. Our annual game with the sophs was a tie, 0 to 0. We claim the school championship in basketball, as we won all of our games, and had two men on the Varsity five. In our school work we have more than held our own.

Let us hope that our class will be of much service to M. S. M. in the future, and hold an honorable place in her records.

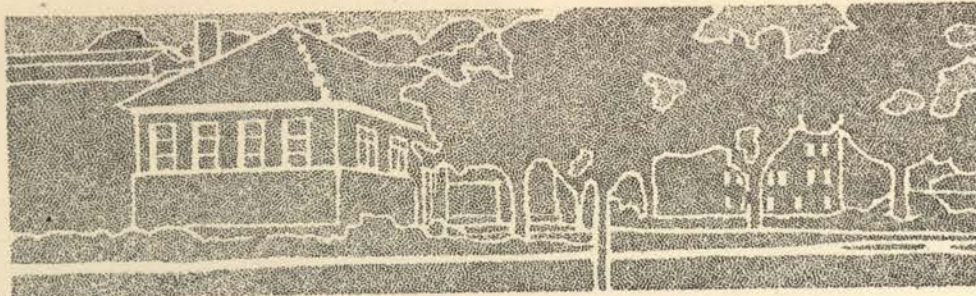




Freshman Class

Ames, Chester Farnum	Bingham, Utah	Kaplan, Abe	St. Louis, Mo.
Aves, William Leonard	Seabrook, Texas	Lacey, Lewis William	Pontiac, Ill.
Beeghly, Wood Davis	New York City	Lyons, Leo Daniel	Springfield, Mo.
Boza, Oscar Felipe	Ica, Peru	McCague, Thos. Purcell	Medicine Lodge, Kan.
Canoll, Leon Horton	Waverly, N. Y.	Maher, John Ralph	Rolla, Mo.
Custer, Raymond	Petersburg, Ill.	Marshall, John Brown	Maplewood, Mo.
Damotte, Edward Victor	Rolla, Mo.	O'Neill, Charles Henry	Webb City, Mo.
Elayer, Carl Sigmund	East St. Louis, Ill.	Roach, Worthy Robert	Rolla, Mo.
Elliott, William	St. James, Mo.	Ruebel, Ernest Hertel	St. Louis, Mo.
Fernandez, Arture, Monterrey, N. L., Mexico	Marissa, Ill.	Schroer, Edward Albrecht	Clayton, Mo.
Forsyth, Lamont Robert	Hutchinson, Kan.	Schwegler, Karl George	Washington, D. C.
Galloway, Arthur	St. Louis, Mo.	Seaton, Loyd	Rolla, Mo.
Gammeter, Walter	St. Louis, Mo.	Shotwell, John Warden	Mexico City, Mexico
Gildehaus, Paul Emmett	Cleveland, Ohio	Skidmore, Myron	Carlyle, Ill.
Griffin, Roy Watson	Troy, Mo.	Trent, Albert Lee	Johnstown, Pa.
Hanni, Fritz	Sedalia, Mo.	Trowbridge, Henry Anthony	Rolla, Mo.
Harris, Elmer	Muncie, Ind.	Wilson, Homer Marvin	Del Rio, Texas
Hayden, Roy Wilbur			





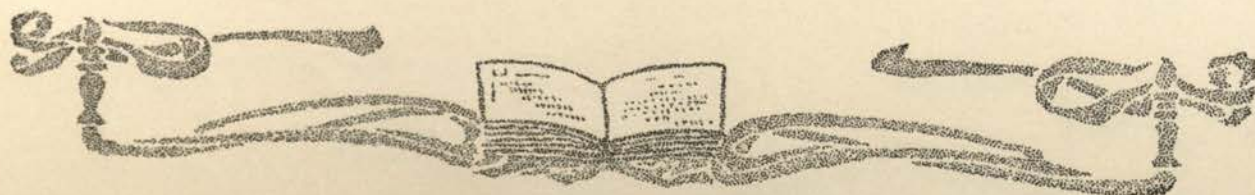
NORWOOD HALL

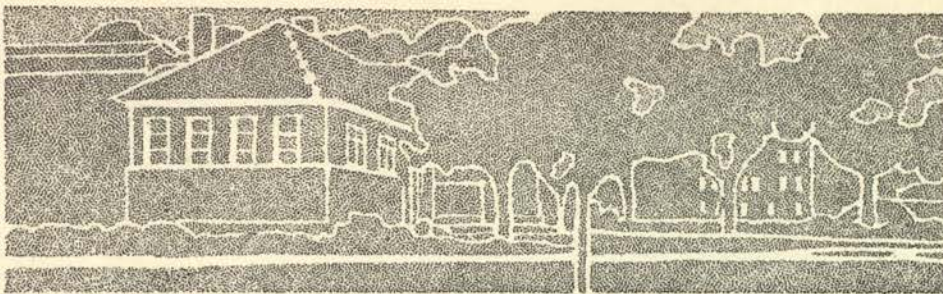


BOOK III.
ATHLETICS.



"COACH"





The Athletic Association

OFFICERS

L. A. Test, President

F. E. Dennie, Physical Director

W. H. Elbelt, Secy.

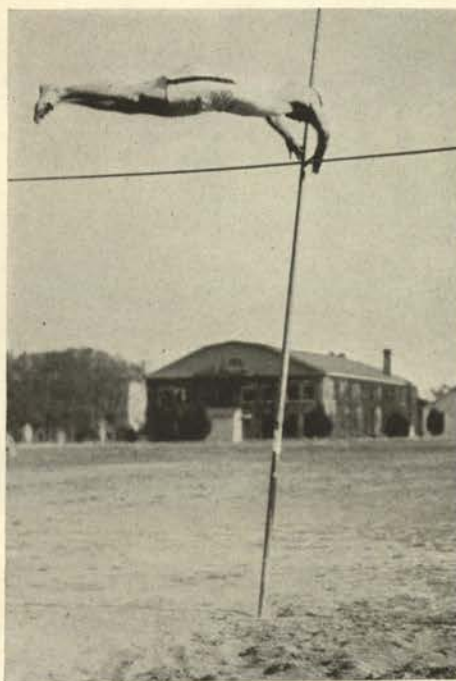
A. W. Hackwood, Treasurer

BOARD OF CONTROL

F. E. Dennie

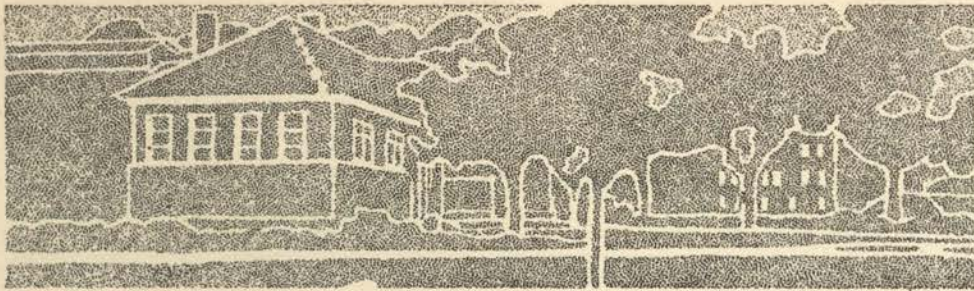
L. A. Test

A. W. Hackwood

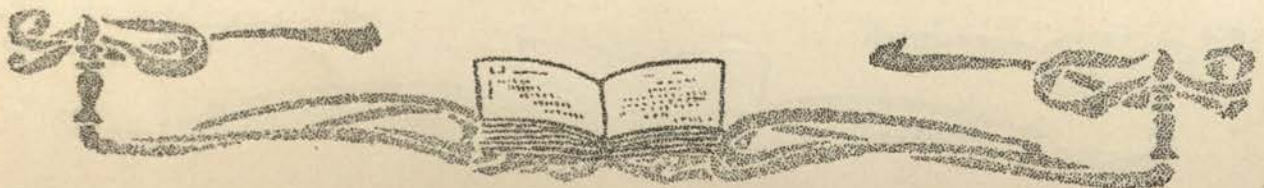


THE BLEACHERS

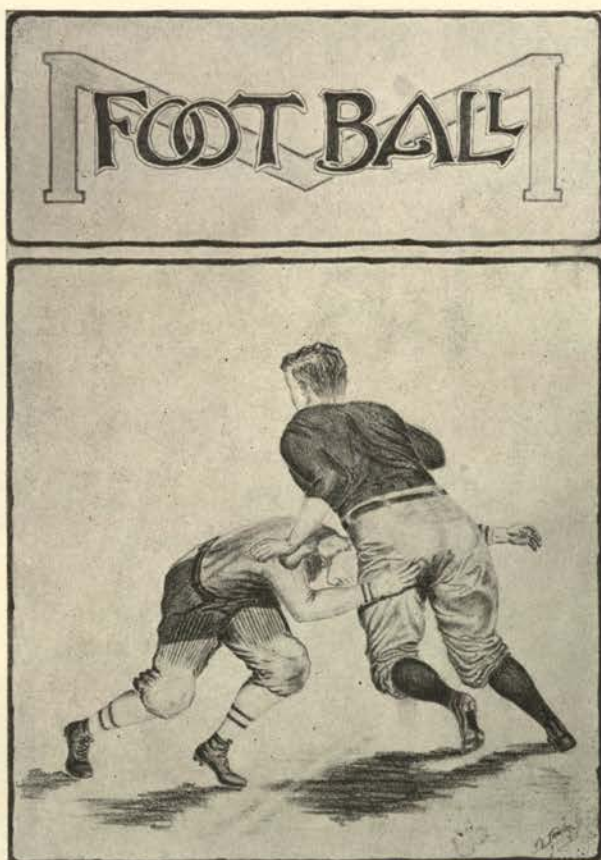




"THE SQUAD"



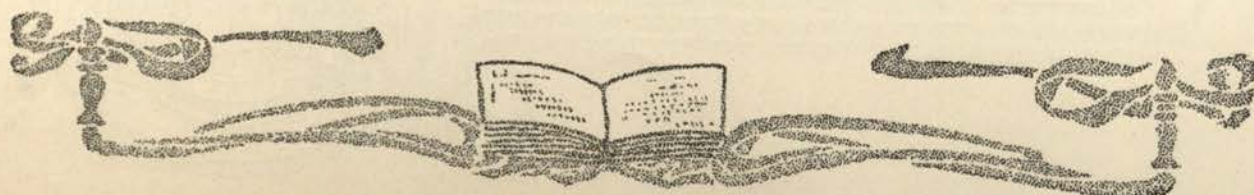
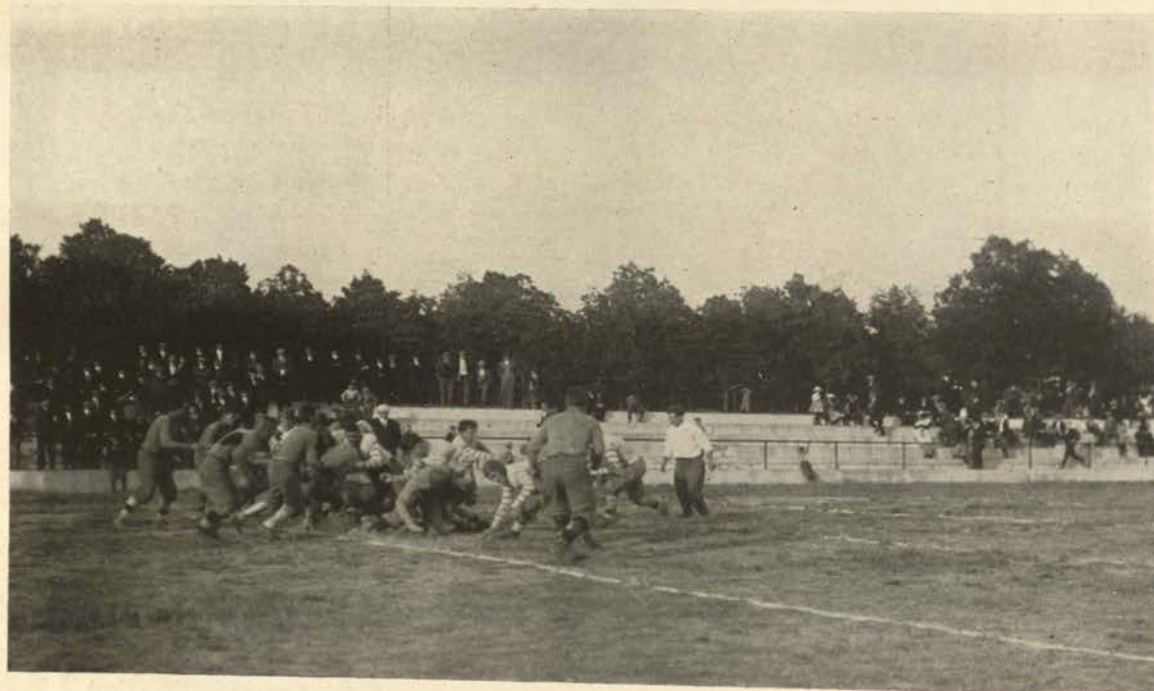
THE ROLLAMO





Football Schedule

M. U.	29	Rolla	0
Central	27	Rolla	12
St. Louis	21	Rolla	12
Springfield Normal	6	Rolla	38
Arkansas	44	Rolla	3
William Jewell	2	Rolla	2
Drury	6	Rolla	0
Haskell	0	Rolla	0





HACKWOOD '12
Manager
Tackle

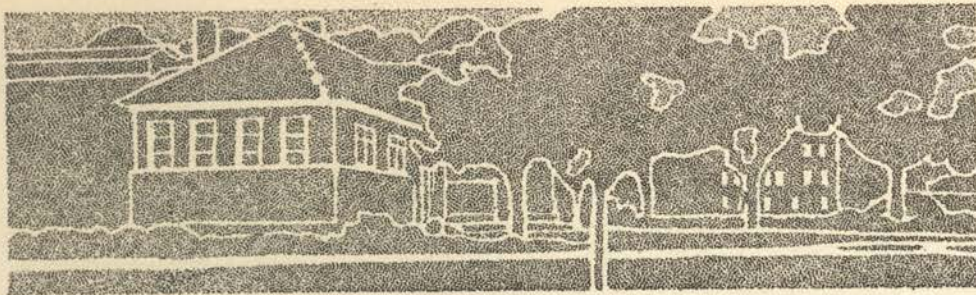
KNICKERBOCKER '13
Captain
Guard



CONWAY '12
Fullback
Tackle

SHERRY '12
Center





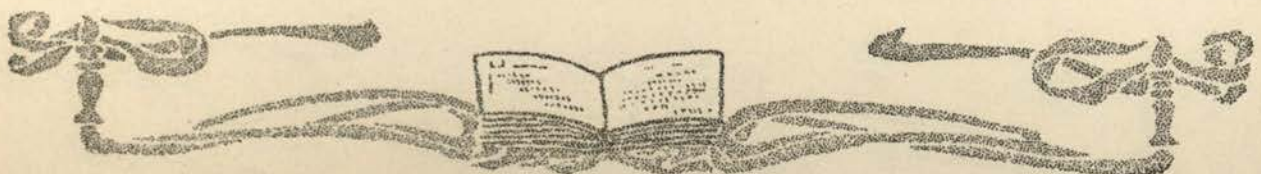
MURPHY '14
Captain Elect
Center
Guard

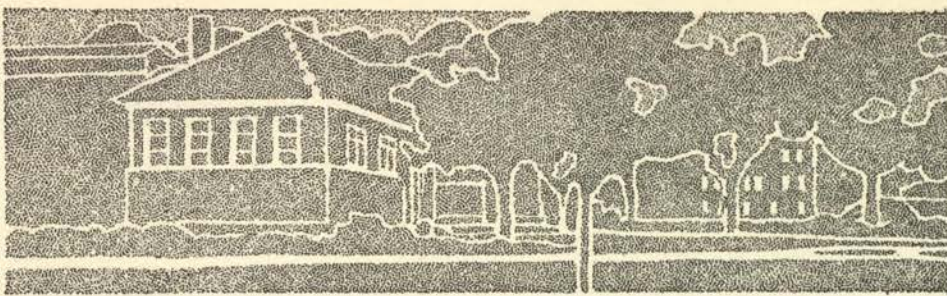
HOLLISTER '12
Tackle



LODWICK '14
Tackle

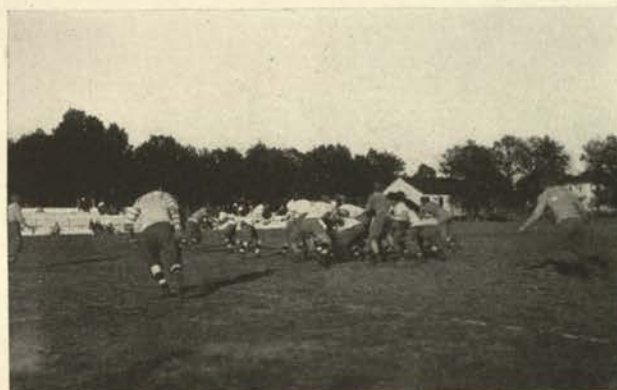
STOLIKER '14
Fullback





BOWMAN '14
Halfback

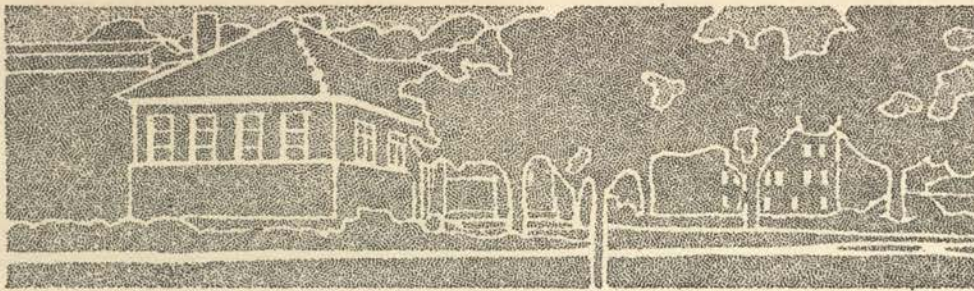
AVES '15
Halfback

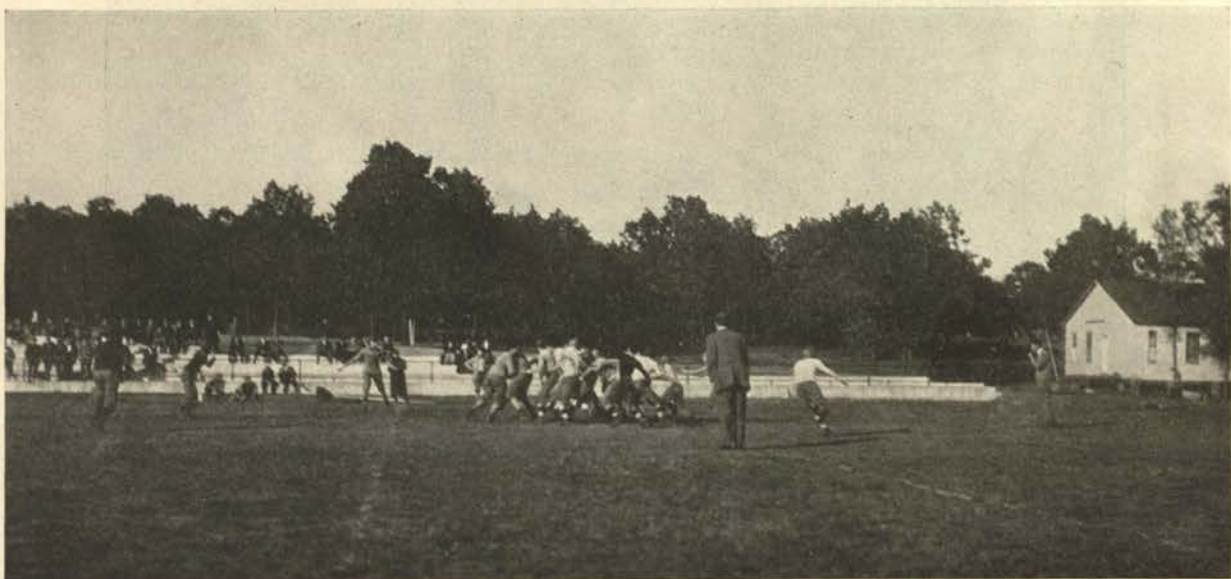
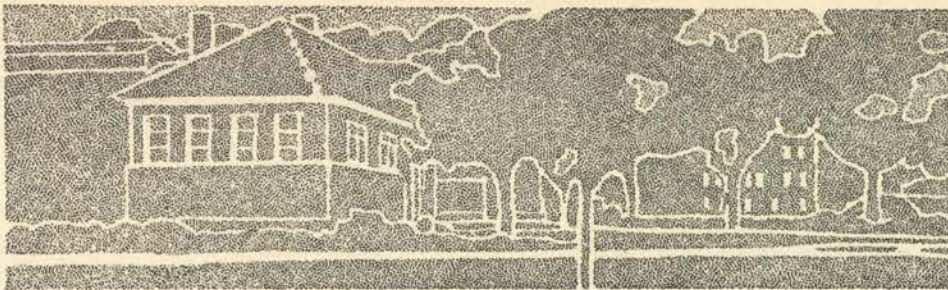


SCHMIDT '14
End

PERRY '14
End

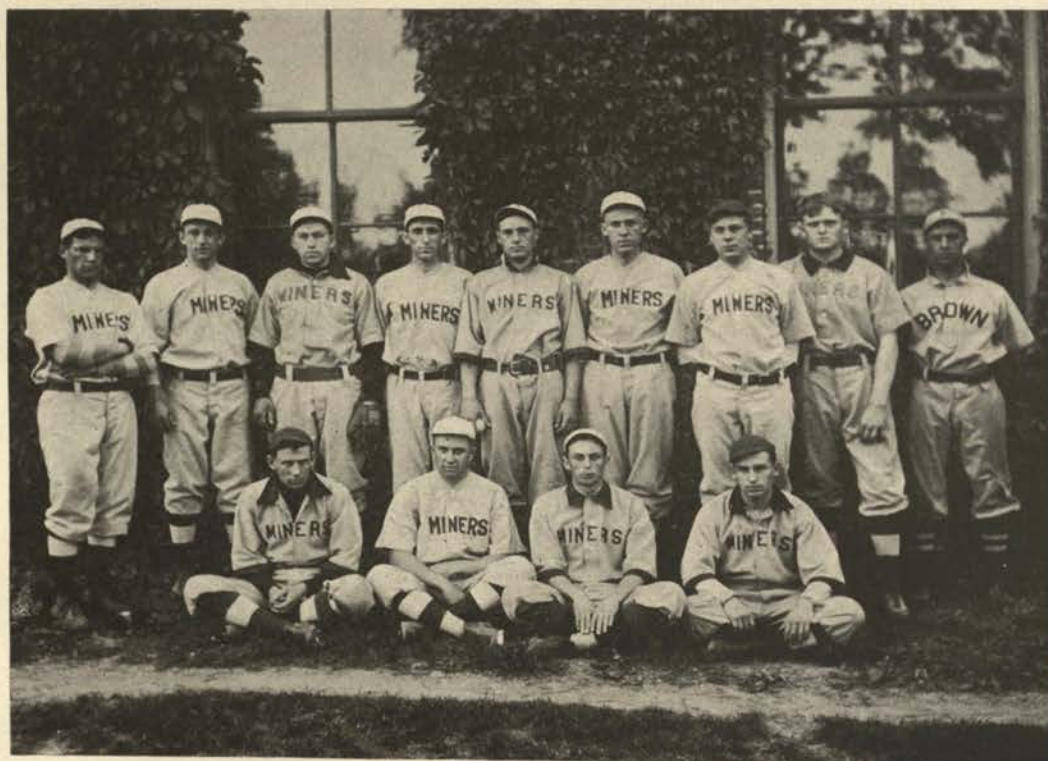
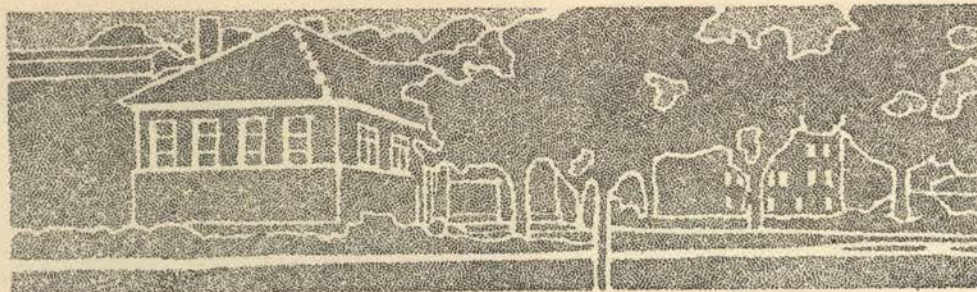






CENTRAL GAME



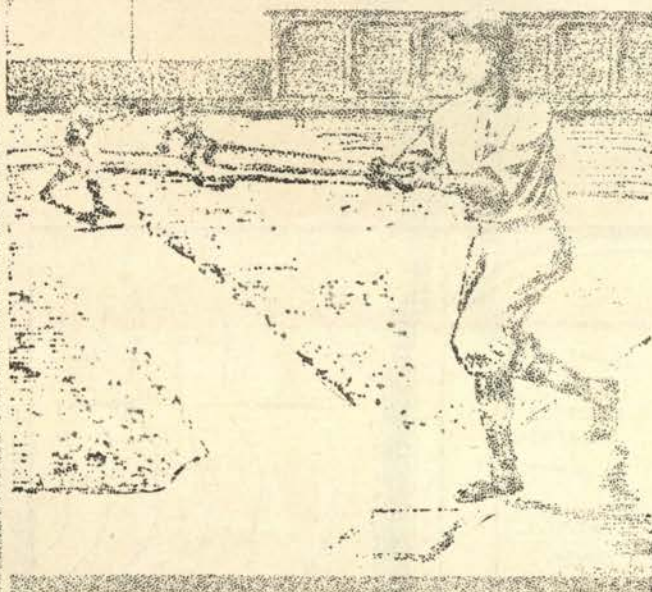


THE TEAM



THE ROLLAMO

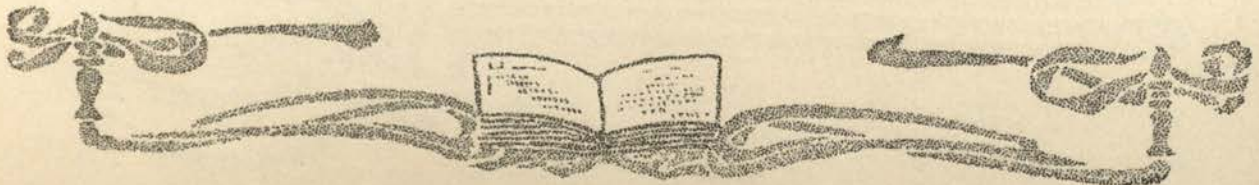
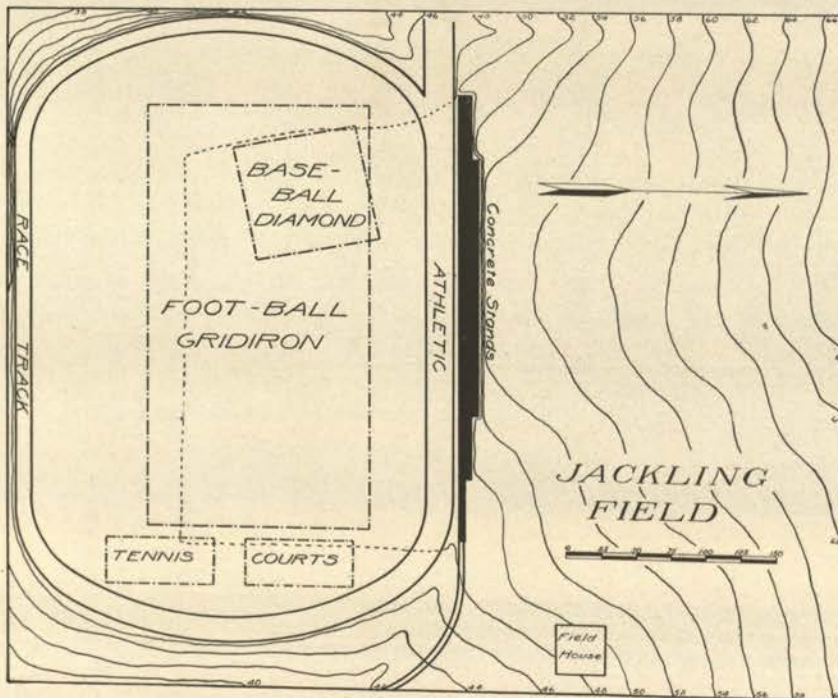
BASE BALL





Base Ball Schedule

Illinois College	0	Miners	0
Illinois College	2	Miners	15
Ouachita College	20	Miners	2
St. Louis University	2	Miners	6
Christian Brothers College	3	Miners	4





PORRI '12
Captain
Third Base



WAGSTAFF '12
Pitcher and Right
Field



CROTEAU '12
Center Field





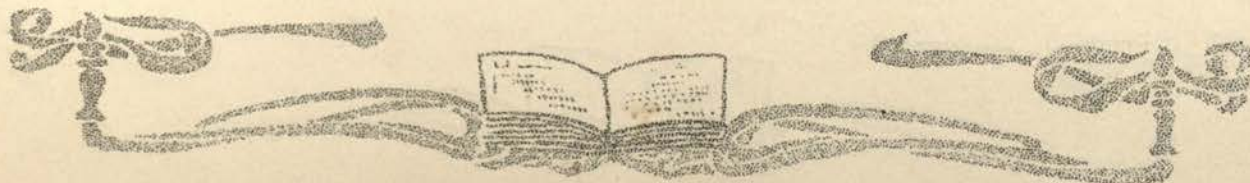
ENGLEMANN '11
First Base

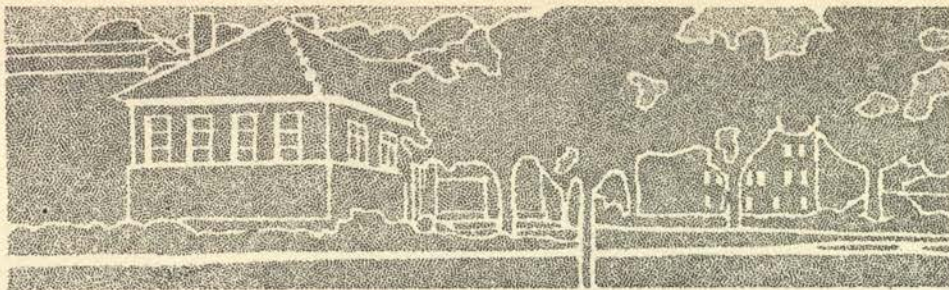


SMITH '11
Left Field



DETWEILER '11
Pitcher





EHLERS '13
Catcher and Pitcher

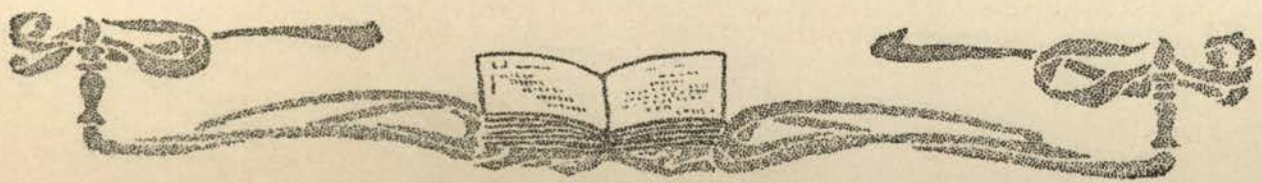
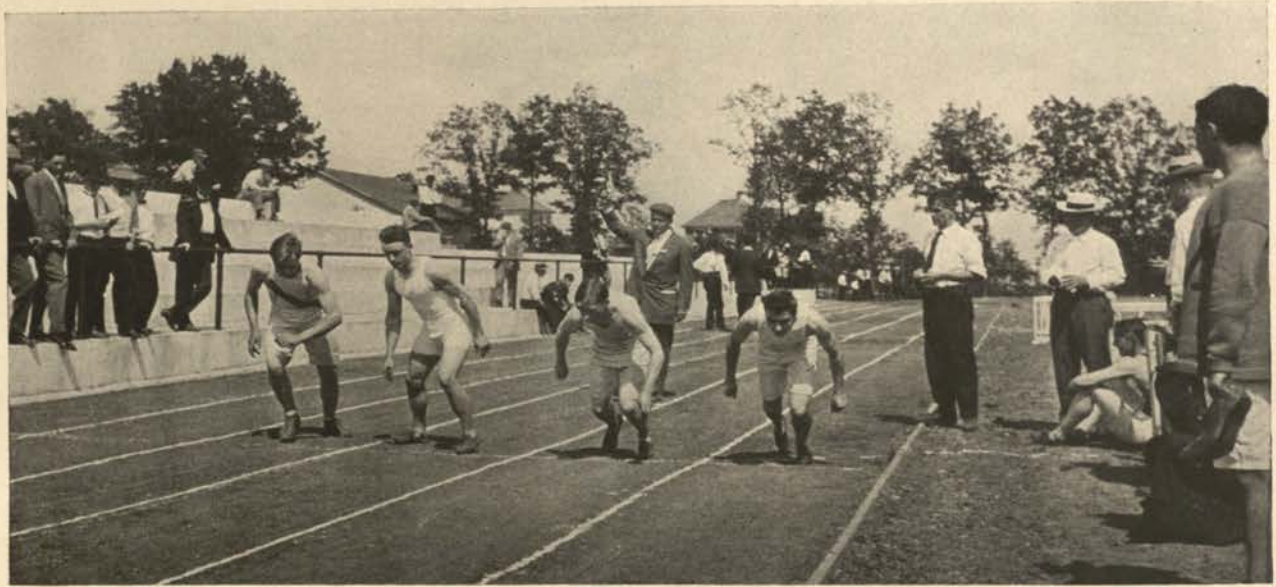
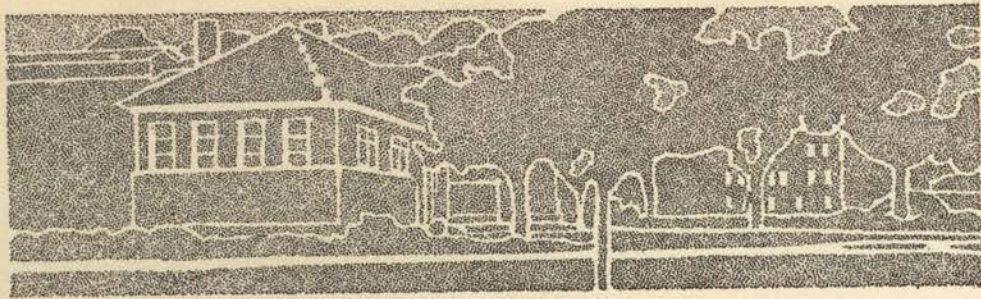


BOWMAN '14
Short Stop

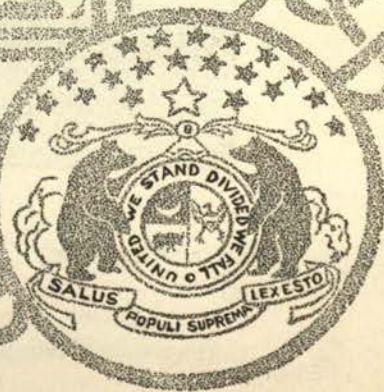


RAIBLE '12
Second Base





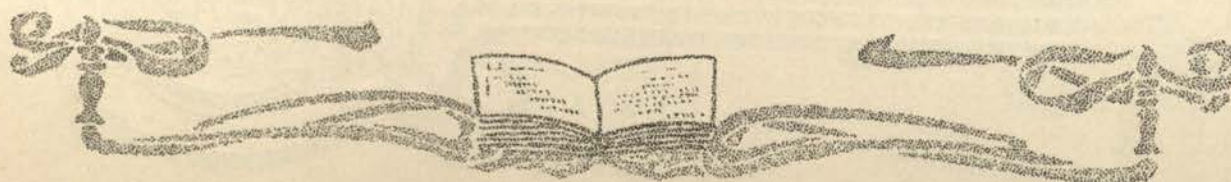
THE ROLLAMO

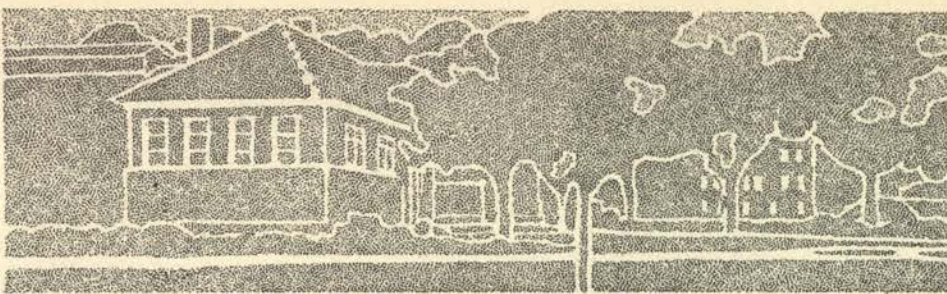




Track Records

Event	Record	Holder	Year Made
100-yard dash	:10 ¹ / ₅	K. V. Moll	1902
220-yard dash	:23 ¹ / ₅	Will Porri	1909
440-yard run	:53 ¹ / ₅	F. O. Blake	1908
880-yard run	2:04	G. H. Boyer	1906
Mile	4:40	G. H. Boyer	1906
Shot put	41' 9"	S. C. Macomber	1908
Hammer throw	118'	M. S. Mazany	1909
Discus throw	111' 6"	E. P. Barrett	1908
High jump	5' 7"	John Graves	1905
Broad jump	20' 10 ¹ / ₂ "	C. W. Traughber	1909
Low hurdles	:25 ⁴ / ₅	M. S. Mazany	1909
High hurdles	:16	M. S. Mazany	1909
Pole vault	11'	S. C. Macomber	1911
Five-mile cross country	30:40	E. D. Lynton	1908





MACOMBER '11
Shot
Hurdles
Broad and High Jumps
Pole Vault



YOUNG '12
440 and 880



COWMAN '14
100 and 220





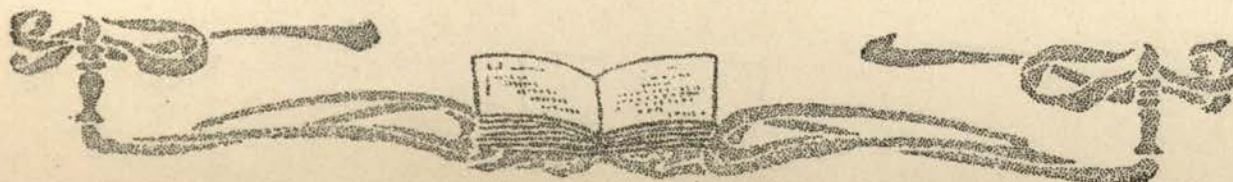
LYNTON '12
One Mile
Two Mile



MARSHALL '13
Broad Jump
High Jump
Hurdles



WEBSTER '13
100 and 220





LODWICK '14
Discus
Shot



CROTEAU '13
100 and Relay

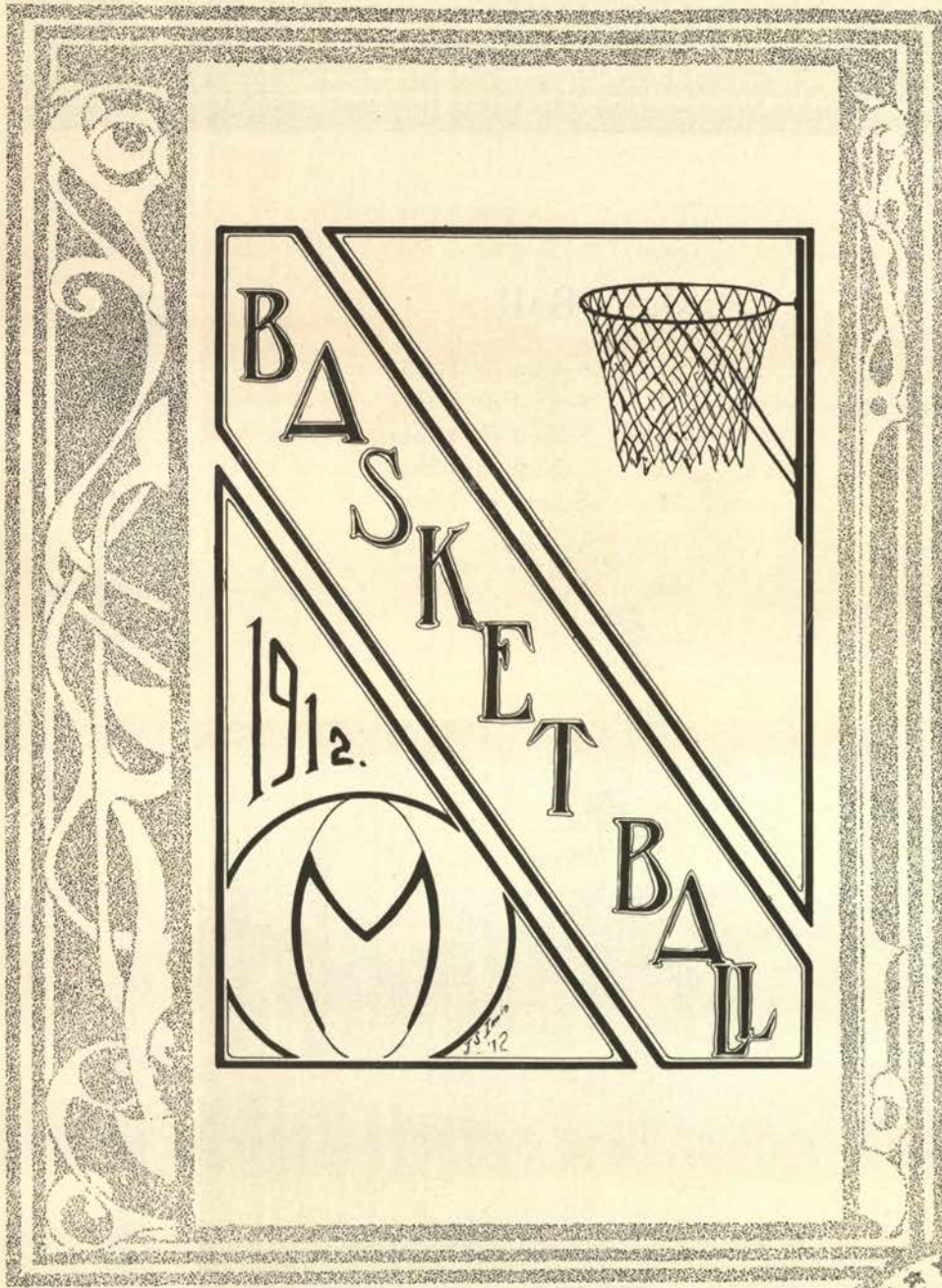


GELINEAU '13
Mile





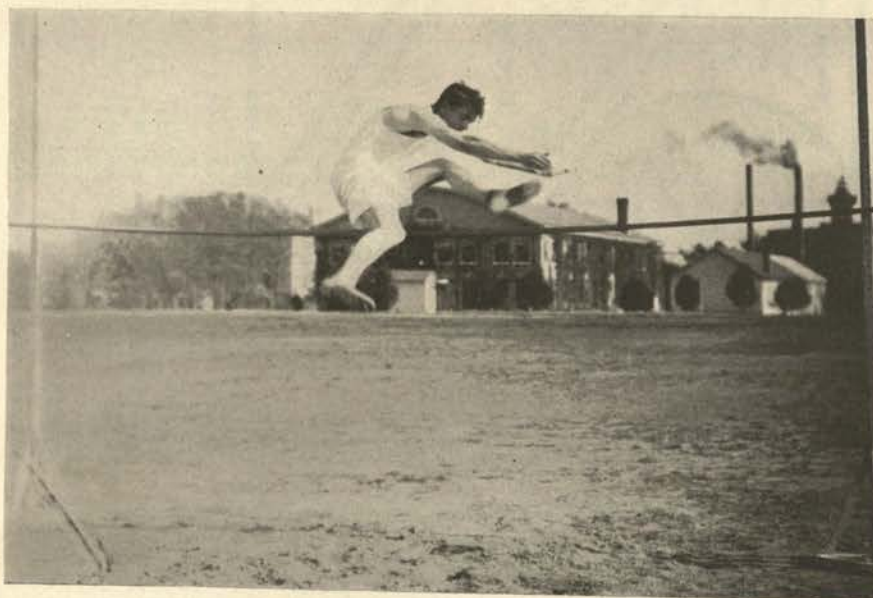
THE ROLLAMO

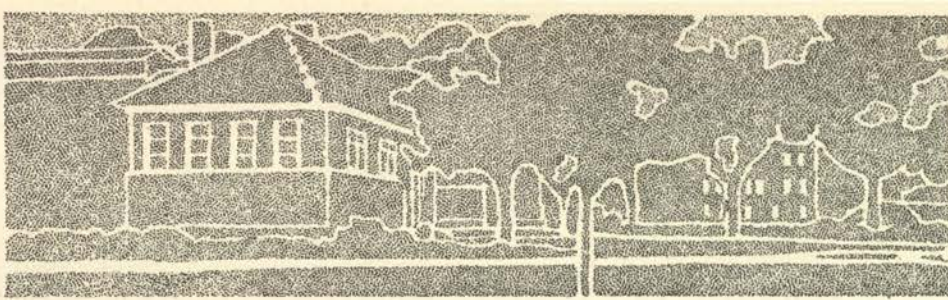




Basket Ball

Washington University	23	School of Mines	13
Washington University	33	School of Mines	19
Drury	20	School of Mines	35
Maryville	23	School of Mines	28
Drury	37	School of Mines	52





"M" Men in Basket Ball



LODWICK '14



CASTILLON '13



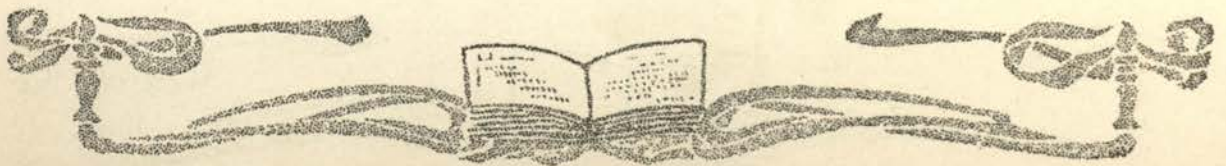
PORRI '12
Captain

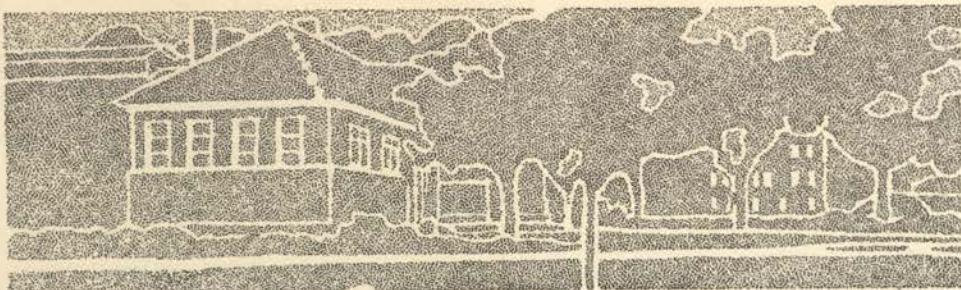


TRENT '15



MAYER '15



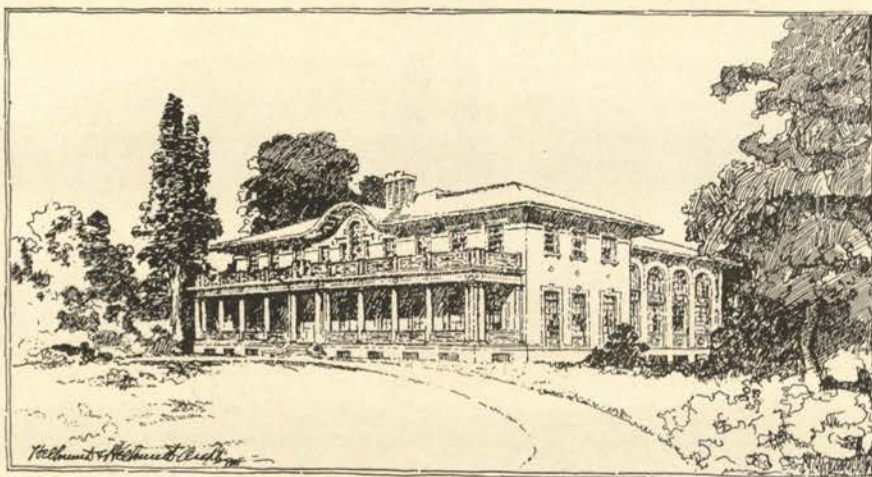


The Proposed Gymnasium

THE two great needs of the School of Mines as it is to-day are an adequate gymnasium and a convenient center for the social life of the school. The proposed new gymnasium will supply both of these. The first story or basement will include a swimming pool, shower baths, dressing rooms and handball courts, etc. The second floor will include the gymnasium, the offices and a

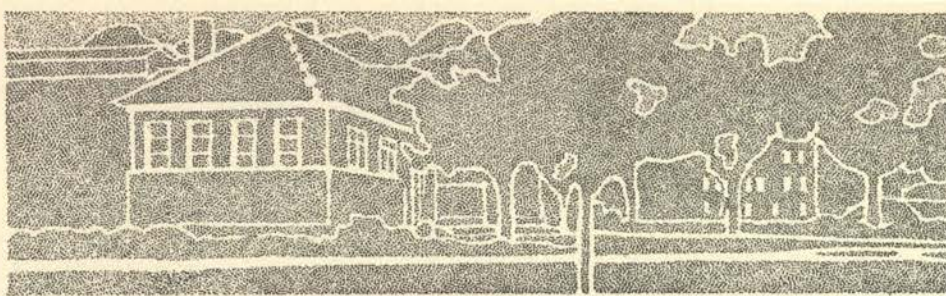
reception room. On the third floor will be the running track or gallery, a music room and a reading room.

Thus the new building will provide not only the opportunity for physical training and a home for the various athletic activities of the school, but also a common meeting ground for students and faculty, and will become a great factor in the student life of the future.

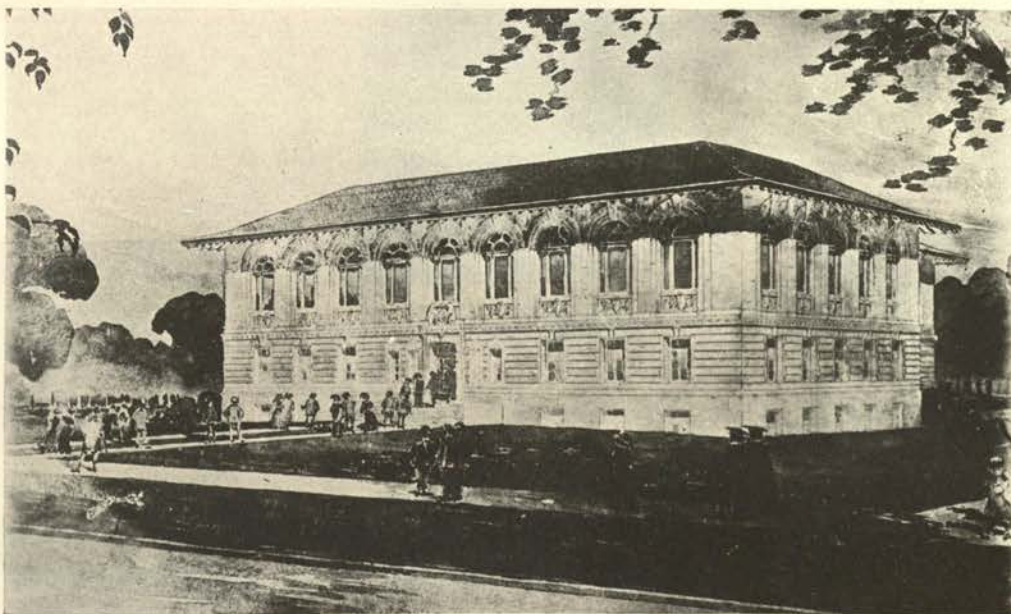


DRAWING OF THE PROPOSED GYMNASIUM





LUMAN F. PARKER



PARKER HALL





Speakers at the Laying of the Corner Stone of Parker Hall



T. L. RUBEY



W. P. EVANS



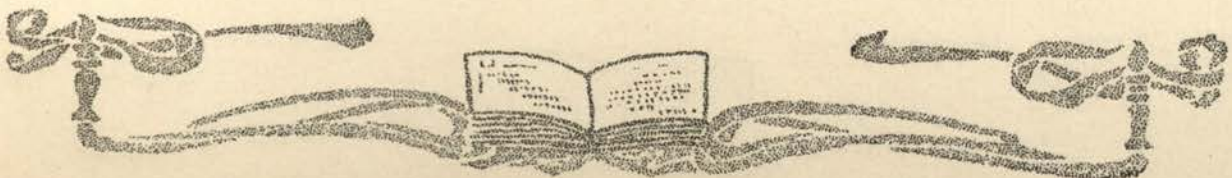
D. R. FRANCIS



J. L. HARRINGTON



G. A. DUNCAN





Speakers at the Laying of the Corner Stone of Parker Hall



WALTER WILLIAMS



J. P. GREENE



E. HAWORTH

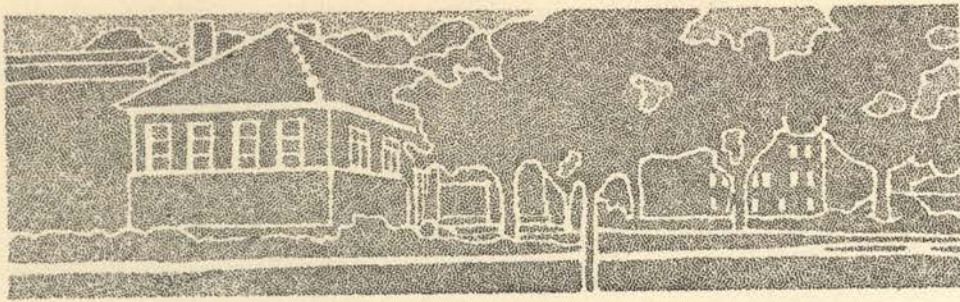


W. R. COX



A. A. JOHNSON





Parker Hall

AS we watch the walls of Parker Hall daily rising and assuming the noble and graceful proportions which will belong to the finished building, we cannot but entertain a feeling of pride,—pride in the school of which it will form a part, in the Faculty and Board of Curators to whose efforts its erection is mainly due, and in the State whose generosity made it possible. It is a building the want of which has long been felt, and whose completion cannot fail to gratify everybody connected with the school.

It is an absolutely fireproof building, built of yellow brick and trimmed with white stone. The finish and decorations within will be of hardwood and marble. All furnishings and appointments will be of the very highest type.

Parker Hall will be by far the most elegant

building on the campus, and will be a lasting credit as well as benefit to the school.

The corner stone of Parker Hall was laid on the fortieth anniversary of the founding of the School of Mines, October 24, 1911. The Parker Memorial Address was delivered by Hon. David R. Francis, of St. Louis. The corner stone was laid by Arch. A. Johnson, Grand Master, A. F. and A. M. of Missouri. The occasion was celebrated with speeches and music, and formed the greatest holiday of the year.

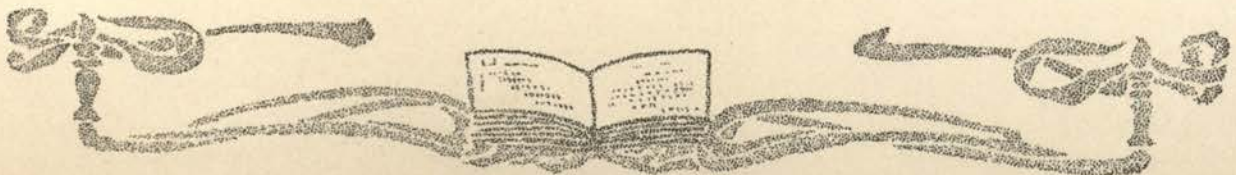
The decision of the Board of Curators to name the building Parker Hall in honor of Luman Frank Parker was a suitable expression of our esteem toward the late Mr. Parker and our gratitude for his constant and faithful service to the school. In no way could our appreciation have been more appropriately shown.



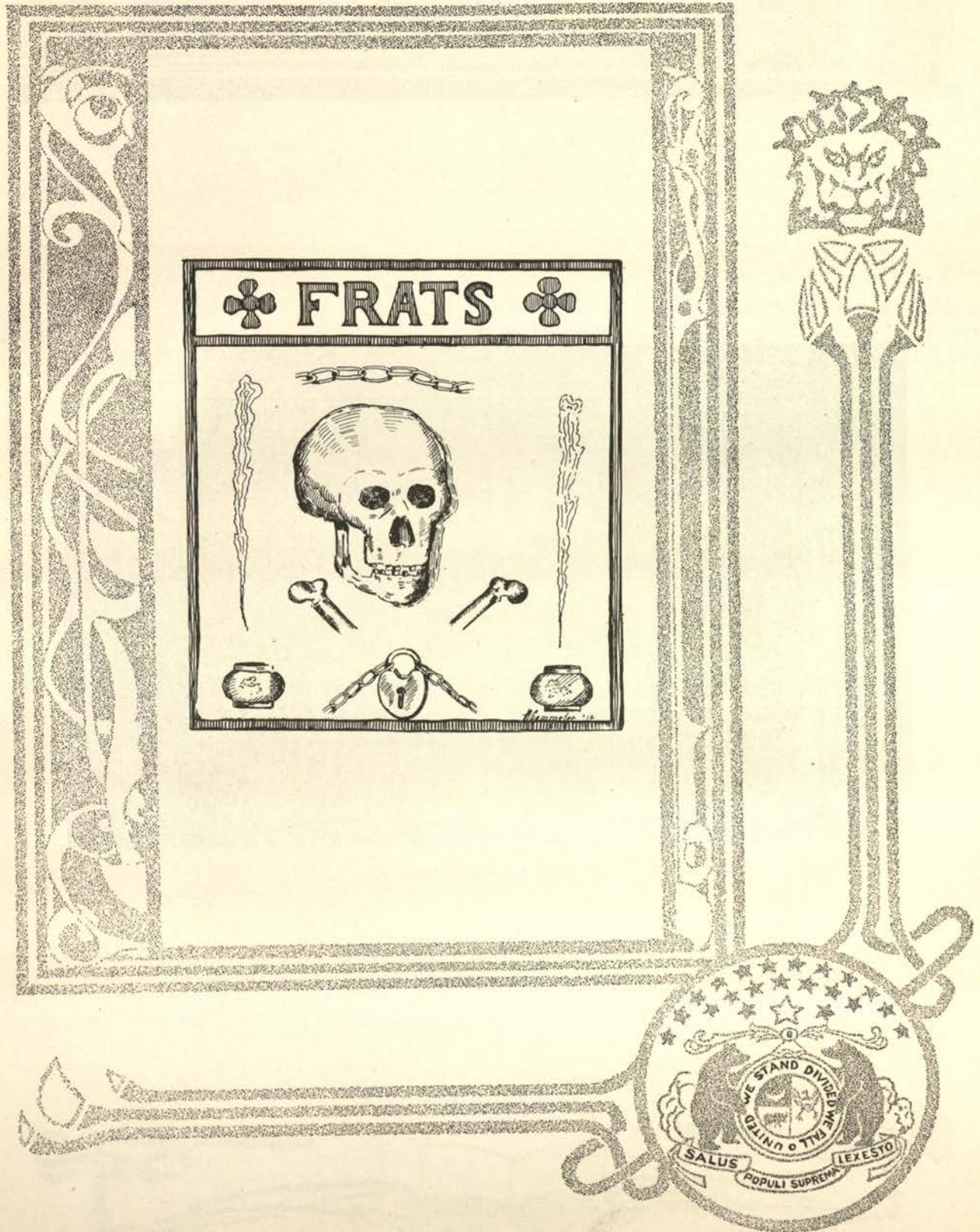
BOOK IV.
FRATERNITIES.

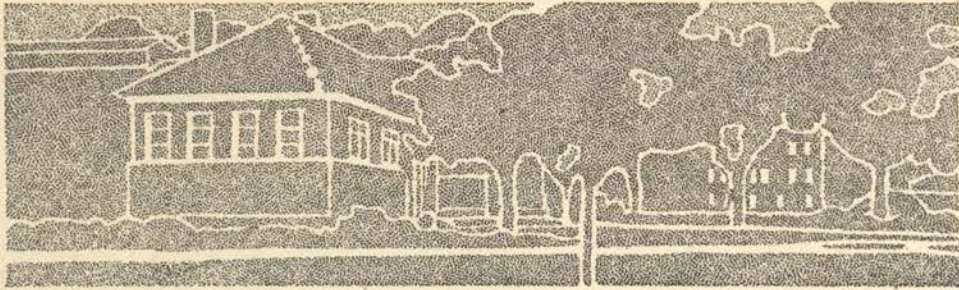


AN OLD CAMPUS VIEW

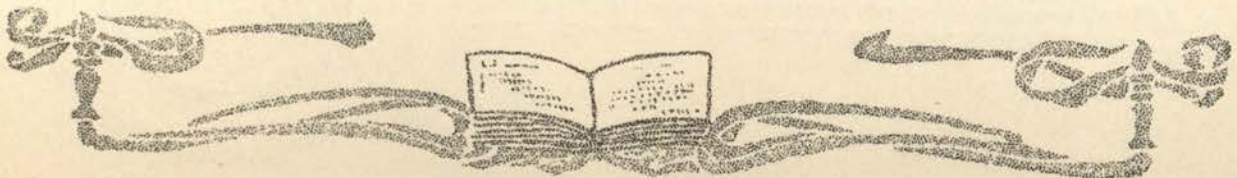


THE ROLLAMO





THE CLAY HOUSE





ROLEMO



1912

Sigma Nu





Gamma Xi of Sigma Nu

Installed January 23, 1903.

Chapter Roll

1912

C. W. Wright

D. I. Hayes

R. W. Johnson

H. W. Chase

C. D. Young

1913

H. I. Brooks

J. F. Seward

H. T. Marshall

H. H. Nowlan

1914

C. W. Hall

1915

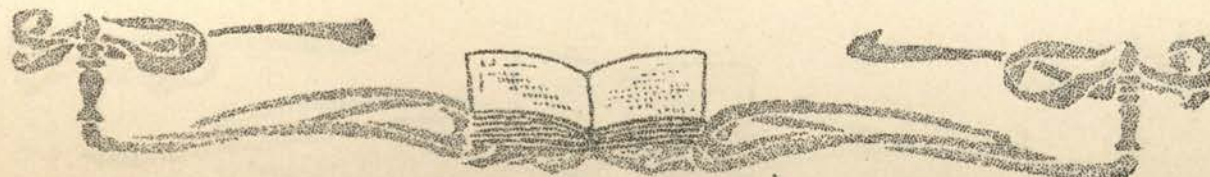
L. H. Canoll

K. G. Schwagler

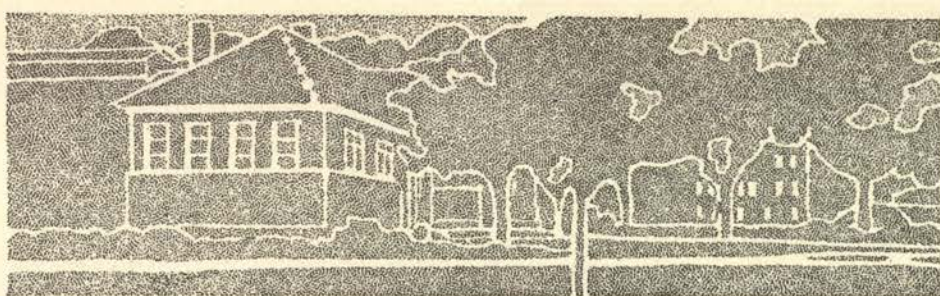
C. F. Ames

C. H. O'Neill

R. W. Hayden

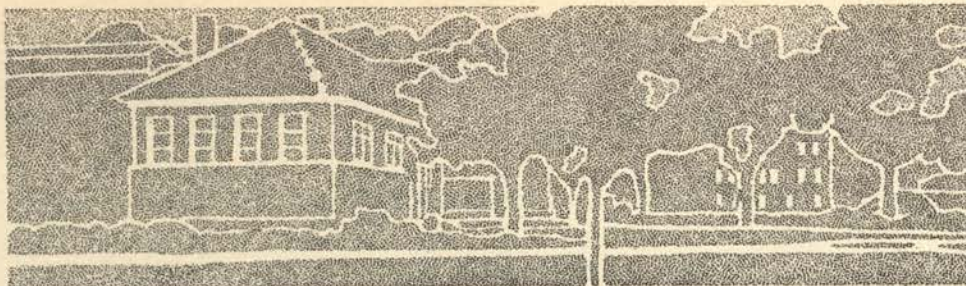


ROLAND



1912





Stray Greeks

In Faculty :

Dr. A. L. McRae, Chi Phi

Durward Copeland, Sigma Rho

G. H. Cox, Alpha Chi Sigma

C. R. Forbes, Sigma Rho

F. E. Dennie, Theta Delta Chi

J. W. Eggleston, Psi Gamma

In the School of Mines :

W. S. Aves, Delta Kappa Epsilon, Kenyon College

J. C. Ingram, Theta Xi, Washington University

G. F. Metz, Theta Xi, Washington University

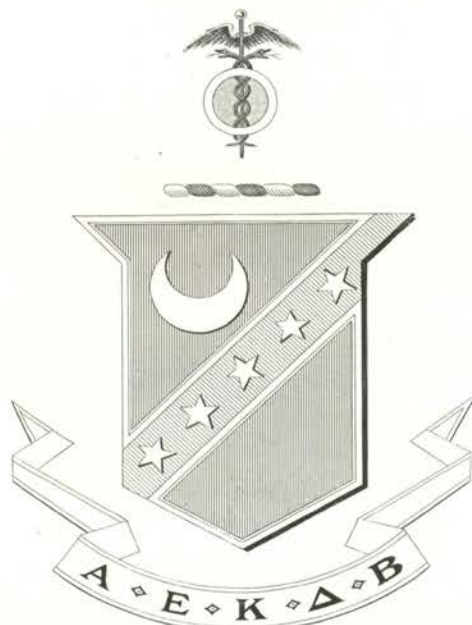
R. L. Forrest, Sigma Chi, Illinois University

S. D. Callaway, Alpha Tau Omega, Missouri University

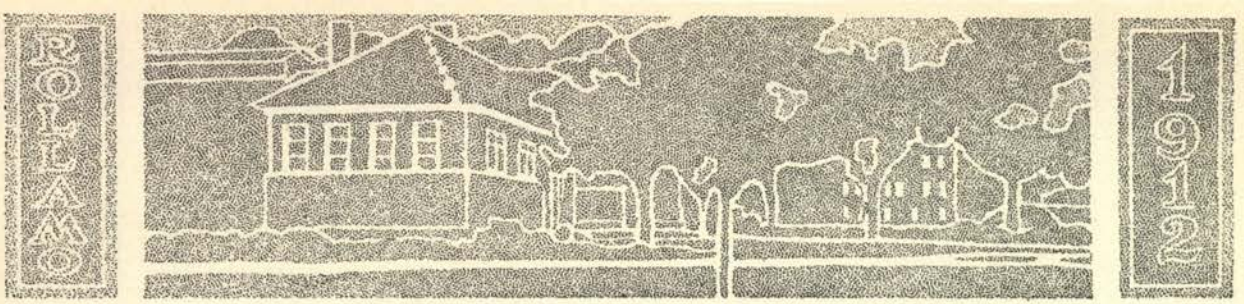
D. E. Andrus, Phi Kappa Sigma, Wisconsin University

A. W. Gleason, Phi Kappa Psi, Bucknell College





DESIGNED BY HENRY WATTS, U.S. GEOLOGICAL SURVEY
ENGRAVED BY E. A. WRIGHT, PHILA.
1887



Kappa Sigma





Chapter Roll

Frater in Urbe,
Victor Harmon Hughes

Post Graduate,
Frank James Flynn

1912

Miller Edward Willmott

George Sylvester Thomas

Arthur Wellesley Hackwood

James Lawton Keelyn

1913

Frank Wesley Cody

John Nixon Webster

John Wykoff Greene

William Ehlers, Jr.

Charles Gottschalk

1914

Lee Reed Bowman

Thomas Rae Thomas

Riley Marsh Simrall

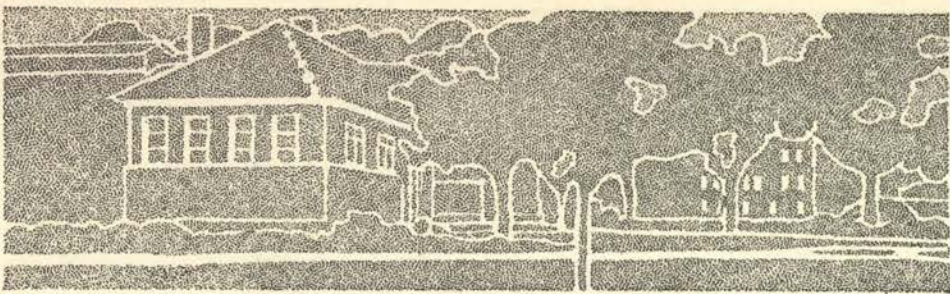
1915

Louis William Lacey

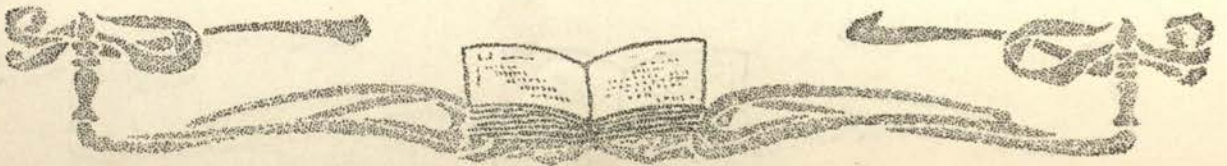
Oscar Fillipi Boza

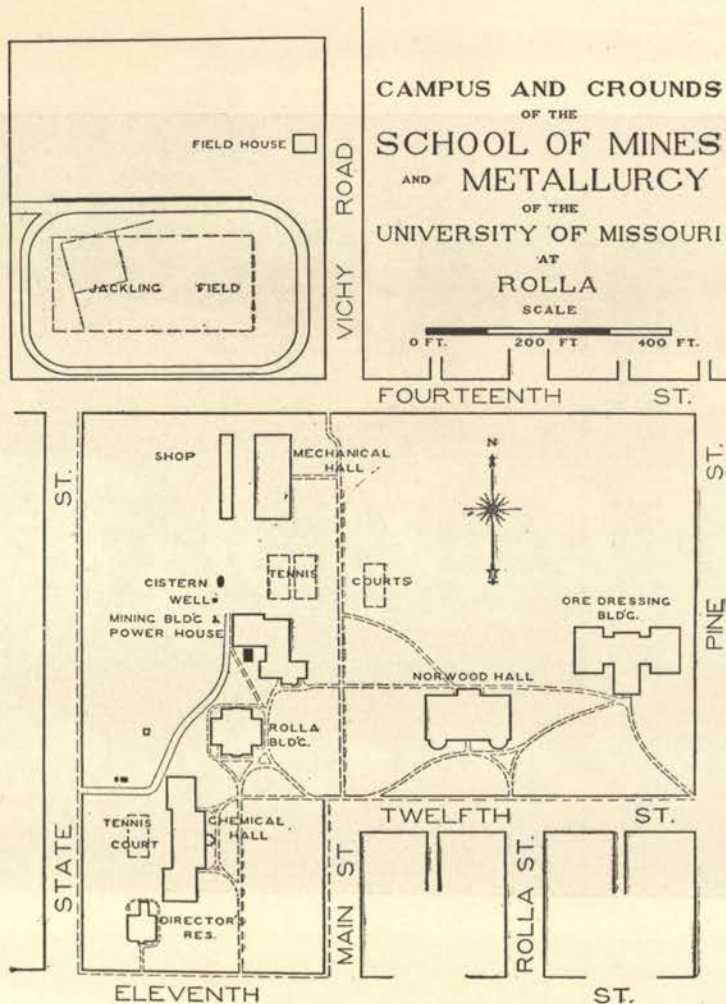


ROLAND



1912





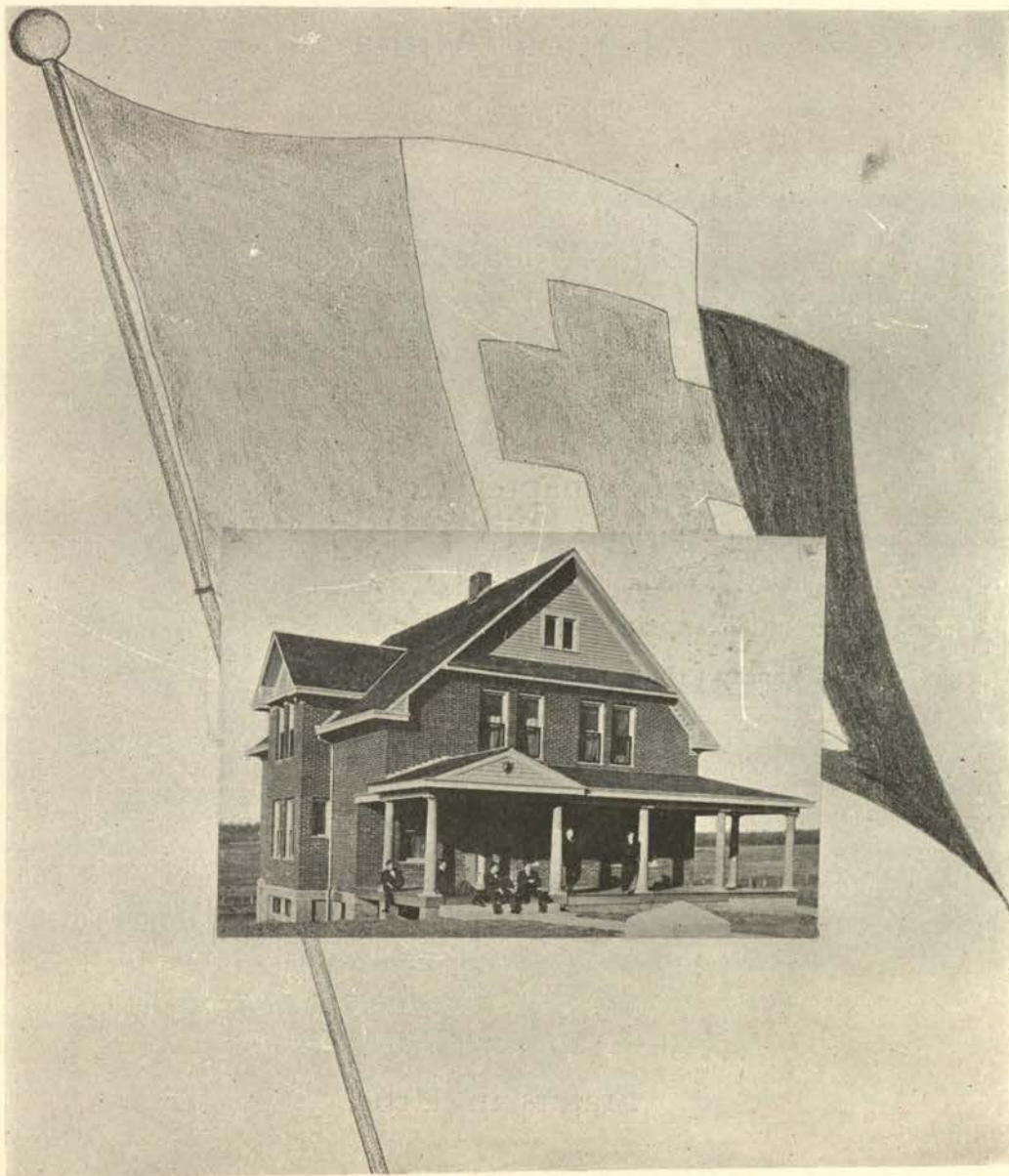


© 1890 H. W. H. & C.

POLARIS



1912





Kappa Alpha

Founded at Washington and Lee University in 1865.

Beta Alpha Chapter

Installed April 27, 1903.

Colors: Old Gold and Crimson.

Flowers: Magnolia and Red Rose.

Chapter Roll

Louis Lincoln Coover, '12, Springfield, Mo.

Clifford LeRoy Conway, '12, Hampton, Iowa

George Francis Condon, '12, Butte, Mont.

Charles Yancey Clayton, '13, Hannibal, Mo.

John Andrew Murphy, '13, Fort Pierre, S. D.

Julius Charles Miller, '13, Joplin, Mo.

Russell Putman Fitch, '13, Warrensburg, Mo.

Gerard Hoopes Cowman, '14, Bellefontaine, Ohio

William Wallace Pierce, '14, Primghar, Iowa

Paul Emmett Gildehaus, '15, St. Louis, Mo.

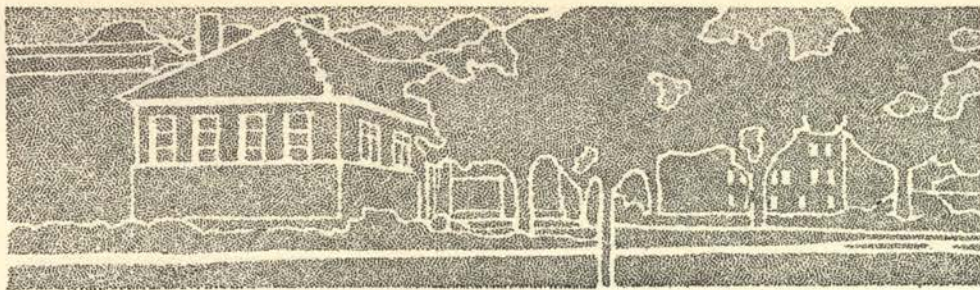
Cal Sigmund Elayer, '15, East St. Louis, Ill.

Fraters in Urbe

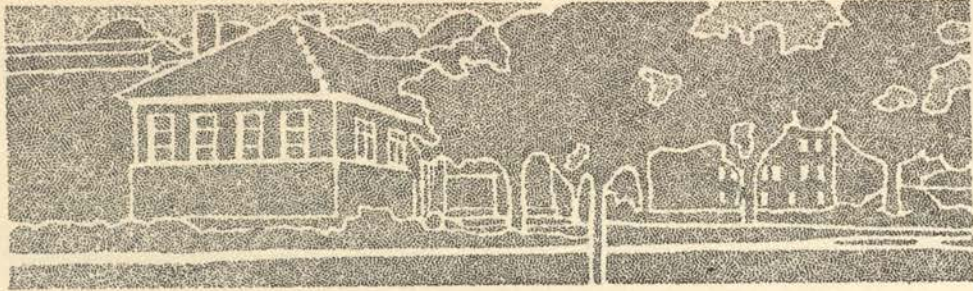
Alexis X. Illinski

Chas. L. Woods





ROLAND

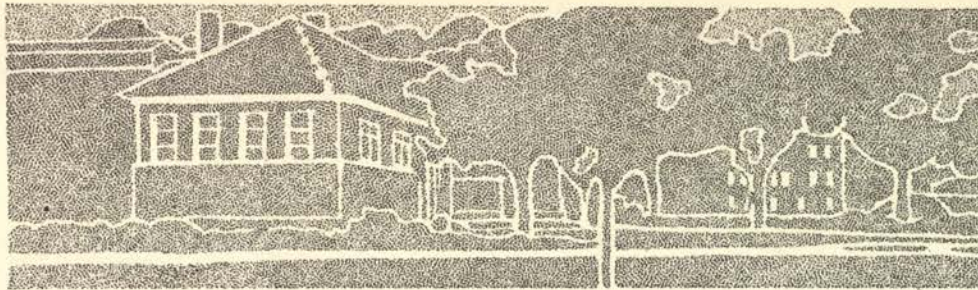


1912





C. A. WOOD, PHILA.
1898



Pi Kappa Alpha

Founded at University of Virginia, March 1st, 1868.

Alpha Kappa Chapter

Installed December 2d, 1905.

Colors: Garnet and old gold.

Flowers: Lily of the valley.

Publications: Shield and Diamond, Dagger and Key.





Pi Kappa Alpha

Alpha Kappa Chapter

Frater in Facultate

Horace Tharp Mann

Fraters in Universitate

SENIORS

Eugene Harding Broughton

Donald Hewson Radcliff

JUNIORS

Ray Gould Knickerbocker

Ray Nicoll McBride

SOPHOMORES

John Norman Schmidt

Frederick Gallaway Moses

Howard Gove Halsey

Clinton DeWitt Smith

Everett Rollins Stanley

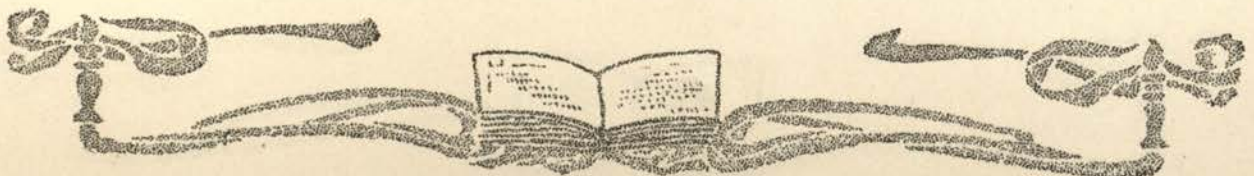
FRESHMEN

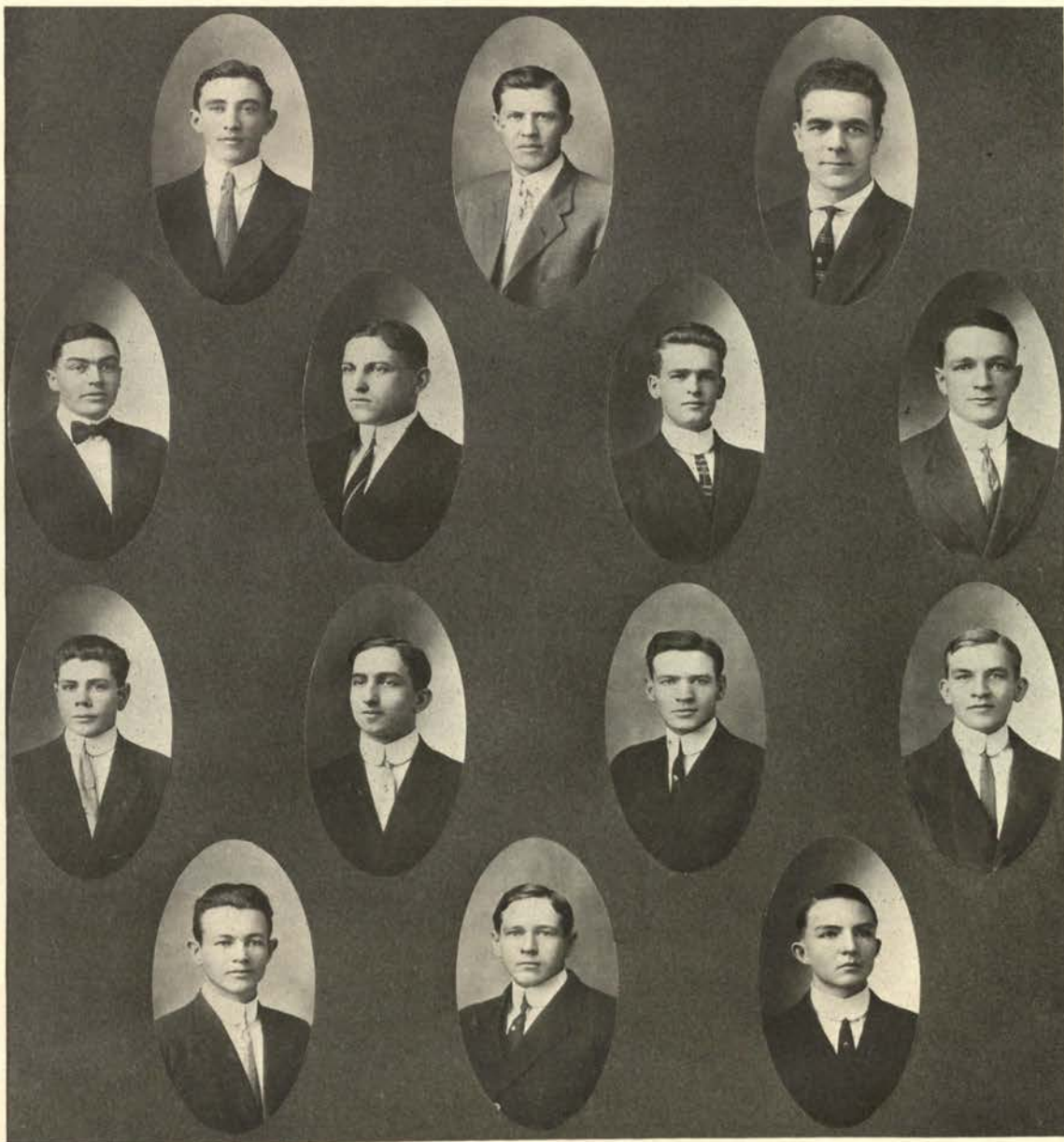
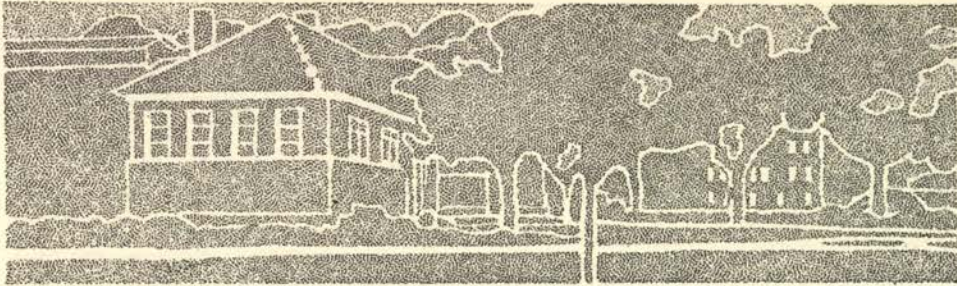
Albert Leo Trent

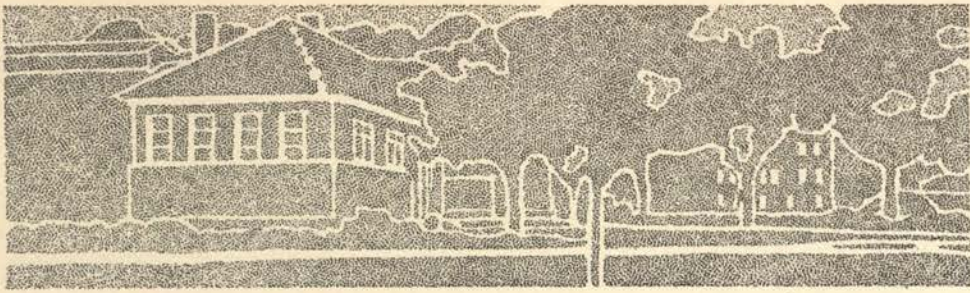
Roy Watson Griffin

Homer Marvin Wilson

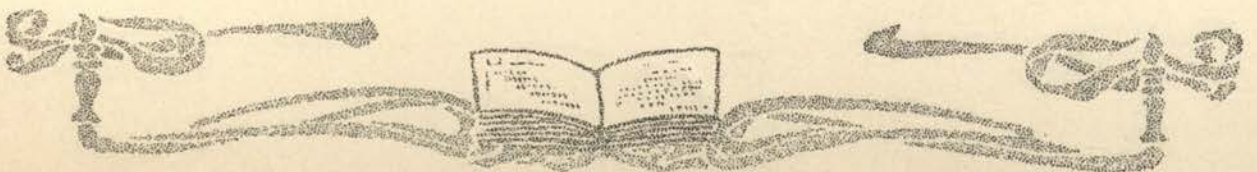
John Warder Shotwell





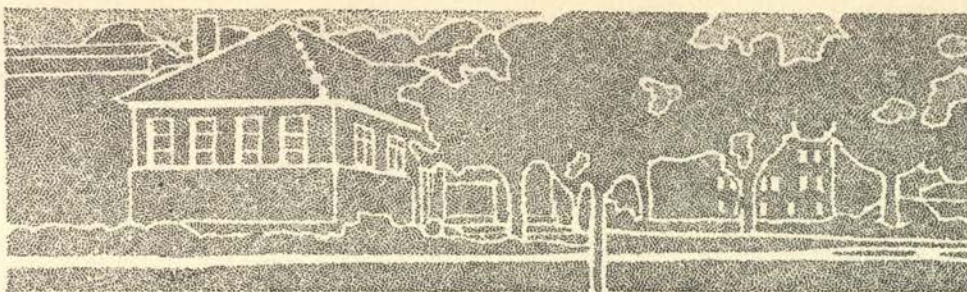


AN OLD CAMPUS VIEW





W. A. D. 1894



Tau Beta Pi

Honorary Members

H. A. Buehler

Lewis Emanuel Young

Austin Lee McRae

George Reinald Dean

Leon Ellis Garrett

Durward Copeland

Louis Agassiz Test

Guy Henry Cox

W. Rowland Cox

Joseph Austin Holmes





Tau Beta Pi

Founded 1885

Beta of Missouri

Established December, 1906

Active Members

Fraters in Urbe

Victor Harmon Hughes

Maurice M. Albertson

Fraters in Facultate

Victor Hugo Gottschalk

Carrol Ralph Forbes

Horace Tharp Mann

Herbert Arno Roesler

Fraters in Universitate

SENIORS

Cairy C. Conover

Harold Percy Ford

Joseph Stewart Irwin

Arch Waugh Naylor

Roswell Hare Maveety

Thomas Andrew Stroup

Eugene Harding Broughton

James Lawton Keelyn

Arthur Harrison Cronk

John Hurtgen

Walter Berry Gray

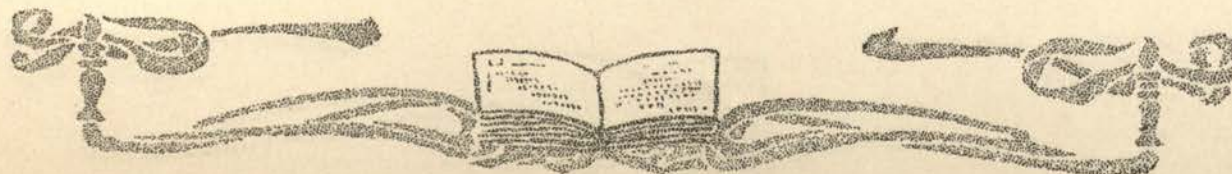
Homer Kent Sherry

JUNIORS

Harry Shaw

Harry Hackett Nowlan

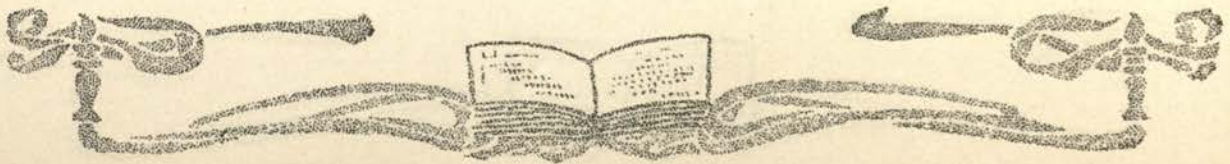
Robert Glen Sickly

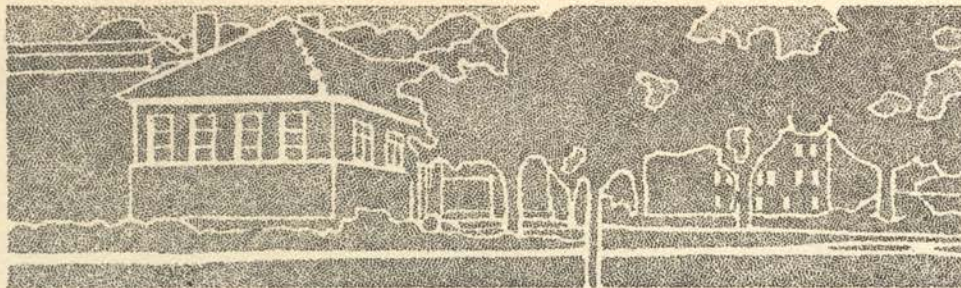


ROLEMO



1912



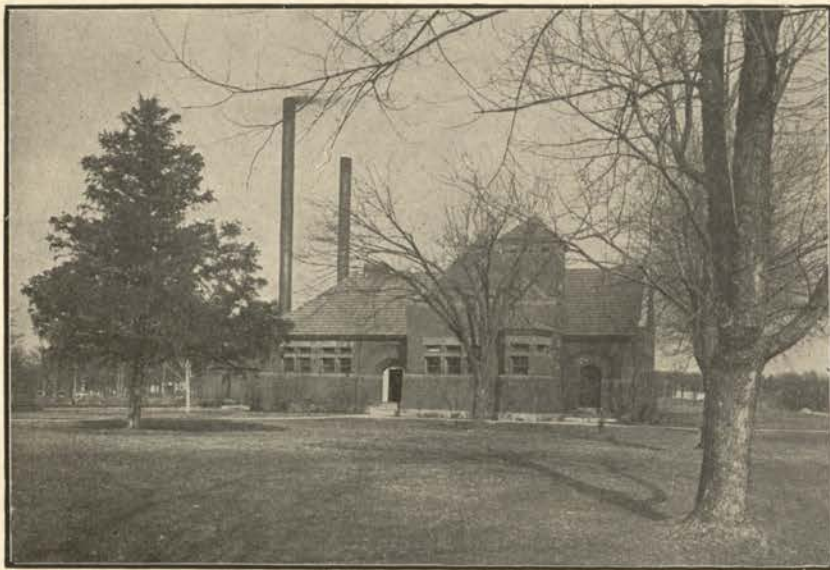


NORWOOD HALL



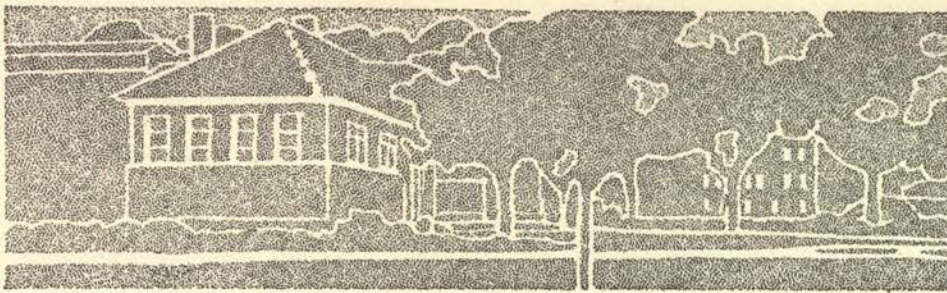
BOOK V.

EVENTS.



THE OLD POWER PLANT





The Junior Trip

"**B**E at the St. James Hotel, Edwardsville, Ill., Saturday, May 28th," was the mandate which inaugurated the sojourn of the class of 1912 with the world of practice for a month. The call to the front was effective, and next day, armed to the teeth with transits, chains and acetylene



lights, we invaded Mine No. 4 of the Madison Coal Corporation to commence our work in mine surveying.

Company Engineers Mix and Blaylock, M. S. M. alumni, gave much of their valuable time in assisting and facilitating our work, for which every member of the party was deeply grateful, and pronounced each a prince of good fellows. With the exception of Teddy Lynton's losing himself daily, much to Coach Dennie's disgust, as he was Teddy's keeper; and Conover's swiping 220 volts off the trolley wire via his ear, nothing untoward happened, and we were able to report—no casualties.

Much fussing was done during the evenings, and all records for rapid attachments were

broken—Macomber and Dutch Elbelt tying for first place. Our attempt to appeal to the esthetic nature of the Edwards-villains by singing to them was evidently not appreciated, for they delegated one of their city officers to come and tell us that incarceration would follow a continuance of the entertainment.

The top floor of the St. James Hotel was a favorite place for recreation from midnight on. Hydraulic battles and pillow contests led in popularity. We were somewhat hampered, however, by poorly constructed pillows, since these were continually springing leaks, and accurate aiming was practically impossible in the snowstorm which followed. The fact that one of the pillows got away through the third



story window is generally attributed to this cause.

After a week of hard work in underground surveying and in mapping we left Edwardsville, some for Southwest Missouri, the rest for Colorado. Prof. Forbes, assisted by Coach Dennie, M. H. Detweiler, E. H. Broughton,





and H. T. Mann, gave us a thoroughly businesslike drill in underground practice, and it was certainly not their fault if anyone failed to profit by the experience.



COLORADO.

We met at the Oxford Hotel in Denver, Monday morning, June 5th, where we found Professors Eggleston and Dudley awaiting us. Professor Eggleston opened with a joke which was much appreciated by the entire company; he then led us out to his old stamping ground, Golden.

Golden, so we were told, is, like Gaul, divided into three parts,—The Brewery, The Reform School, and The Colorado School of Mines. From the heights of South Table Mountain we obtained a magnificent view of the three provinces, and of Denver, twelve miles away. We learned lots of geology, and collected many hand specimens of rocks and minerals. The illustration shows some of the boys carrying their treasures to Prof. Eggleston. While in Golden we were given the freedom of the School of Mines and were very favorably impressed with the buildings and equipment.

After leaving Golden we spent five days in the Clear Creek District, where we studied mining and milling methods, and geology. The geology and lithology of the district was something new to most of us and never failed to interest all. It was down on Soda Creek that Bill Porri almost won the nickname, Geikie; but his dike or fault (Bill wasn't sure which it was) turned out to be neither.

We went underground at the Stanley, the Argo Tunnel and the Gem. The ride up the crooked Gem shaft in the skip Teddy Lynton pronounced the "most miserable ride he ever took." It was here also that Mark Sheffer took second place in a scrape with the gate timber at the seventh level, and was with great difficulty prevented from an immediate return to the bottom.

Idaho Springs left behind, we took the train to Georgetown, drove to Waldorf and hit the snowy trail over Argentine Pass. There, at the crest of the Argentine,—at the top of the



world,—that was the climax of our pilgrimage. The dizzy height, the sublime immensity, excited profoundest admiration; but they did more: they amazed and stunned. Words





were as powerless then to express our feelings as they are inadequate now to describe the scene. We could only feel.

It was a hungry and tired bunch that attacked supper in Montezuma that night. While there we found time to play the natives a game of ball. For the score, see the natives. In the evening after supper we sang to the Montezuma miners. They seemed to like it, at least they didn't stop us, which goes to show that they had better manners than the Edwardsville people. We liked Montezuma.

An interesting day at the dredges at Valdora followed the stay at Montezuma. Mr. Lohman, manager of the Colorado Gold Dredging Company, an alumnus of M. S. M., gladdened the hearts of the Miners' band by entertaining them at a dinner which all remember as one of the bright spots of the trip.

Leadville next claimed our attention. Visits to the Iron and Silver, Wolfton, Silver Cord, Little Jonny, the Yak Tunnel, and the A. V. Smelter took up most of our time. Leadville is a lively place in some ways. The Leadville girls seemed to be very fond of the college boys, so we had to appear as unattractive as possible to avoid scenes. Professors Eggleston and Forbes got sick at Leadville. Professor Eggleston blamed it on the water.

Leaving Leadville we took an all-day journey back to the "Queen City" over the C. and S. We visited the Mine and Smelter Supply Co., The Henry E. Woods Ore Testing Plant, The J. Geo. Leyner Eng. Works while there and took a day's trip to Morrison and Golden to study geology. Round-trip tickets Denver to Morrison cost 60 cents, while one-way

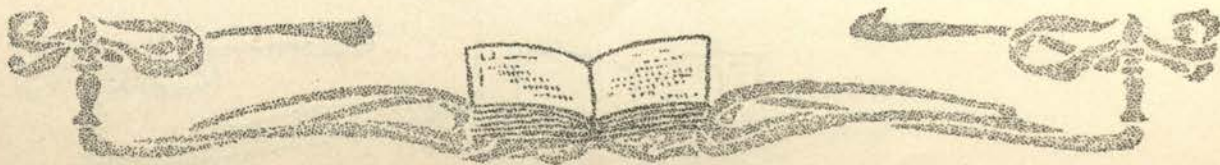
tickets cost 70 cents. Two of the fellows bought one-way tickets.

Denver amusements proved most alluring, and it was with reluctance that we departed for Colorado Springs.



At the Springs we visited the Golden Cycle and Portland Mills, and took a day's geology hike through Williams Canon and the Garden of the Gods. It was here that we were mistaken for Boy Scouts. This was too much; an investigation followed, and it was unanimously decided that the "Beardless Boyd" was the cause of our disgrace. Thereafter we kept him out of sight as much as possible. In the Garden Bill Porri again almost came to the front as a geologist. His find of a specimen of scaphites in the Carboniferous was tabooed as a frame-up by Prof. Eggleston, since old "Scap" is found only in the Cretaceous. At the Cave of the Titans, near the gateway to the Garden of the Gods, we met the school teachers from Moline, Ill. They were nice girls and shared burros with us. One burro objected, however, two times. The photograph shows Hank Adams just about to leave the animal's back.

At Victor we went underground at the Port-





land, Independence, Strong and Elkton. These were real mines,—the best we had seen. The Cripple Creek District is undoubtedly Colorado's greatest mining center; this fact was strongly impressed upon us by the magnitude of the operations and the modernness and efficiency of the mining and milling practice that we saw.

We found many old M. S. M. boys at Victor. Jovial Claudie Cushwa, effervescent Scotch Bunton, Keniston, Rube Morgan and Colly Pierce were all there, so we had a reunion. The Alma Mater back in Missouri was the topic for conversation.

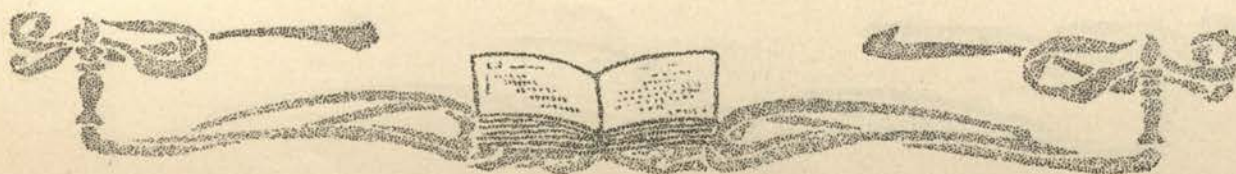
Our work in the Cripple Creek District finished, we went to Pueblo, the final destination of the trip. The last official business was a visit to the wonderful plant of the Colorado Fuel and Iron Company, where we saw the

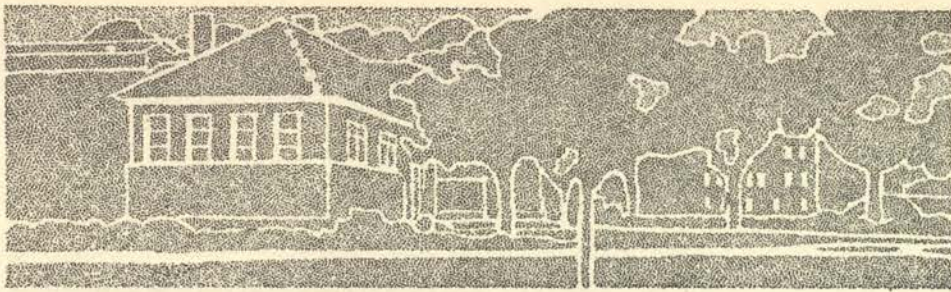
iron ore transformed to the finished steel rail.

By this time we were beginning to hit the free lunches, and when we couldn't find them we discovered that bread and milk made an excellent meal.

The trip was over. We had embraced one of the rarest opportunities that fortune can offer. That little band of twenty of the best fellows in the world, whose interests and ambitions were one, worked and played together for a month. The intimate association induced a spirit of *camaraderie* that is seldom attainable by any other means.

We realized that these were the golden days of our college life, and now that they must end, it was with deep regret that we said good-by, but we were glad that we really meant *au revoir*.





The Missouri Trip

AT 7:50 in the morning of June 3d, 1911, four students and two professors of the Missouri School of Mines boarded the Iron Mountain train at St. Louis for a three weeks' trip of instruction and inspection of the southeastern mining region of Missouri.

Nearly two hours later we arrived in Herculaneum, our first stop. Here we first saw the old roasting plant, and we were told how things were done years ago. Then we went to the modern plant where we saw the pot method of roasting. After dinner we went to the works and went through the blast furnace division. We next started on a little walk to Crystal City to visit the glass plant. A young man from the office was sent to guide us, and we saw the whole works, from sand, soda and potash to plate glass.

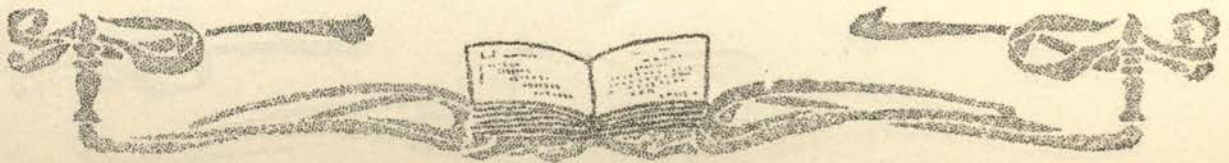
Our next stop was at Flat River, where we rested up over Sunday. Monday we went to the Federal Lead Company's Mill No. 3, on the hill. Here we started in where the ore did and followed it to where the concentrates were shipped. Then we went back to the starting point and followed up the ore, making a flow sheet of the whole plant. We spent from eight till three-thirty in the mill, a half hour in the canvas plant, and a half hour in the power house.

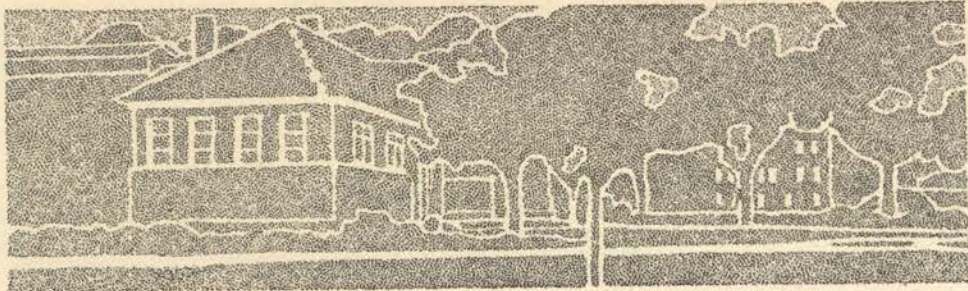
Tuesday. Bang! Bang! Bang! 6:30 a. m. was the next thing that disturbed us and we rolled out promptly. As soon as we were able to get our eyes opened a little we discovered

that it was raining. It was the first cousin to a cloudburst, but that didn't bother us any after some one said breakfast. After breakfast we hit the trail, or rather the creek, for the street was simply a young mountain torrent, and finally arrived at the shaft house where two of the officers met us and showed us everything. The mining was very interesting to us, as the method was quite different from what we were used to. In the afternoon we visited the shafts around the hotel and saw the different methods of handling the ore from the shaft to the mill.

The next day we hiked to Leadwood, about three or three and a half miles distant, and spent the morning in the St. Joe Mills. We next went to Bonne Terre, where we visited the gas power plant. This proved to be very interesting, as it was the first time that some of us had even been in a plant of this kind. We went from the gas plant to the engine room, where the mammoth gas engines are. From there we went to the mill, where there were numerous Harz jigs, the first we had seen in the district. We then went to the station and, after a wait of about an hour, boarded the train for Flat River.

Thursday we tramped to Desloge, a few miles from Flat River. We were met by the assistant superintendent, a former M. S. M. man, who proceeded to show us everything that was to be shown, lecturing all the while on everything of importance. At noon he let us off for about an hour and told us to be sure





to be back at one o'clock. We hiked to town and to the hotel. After dinner we went back to the works to go through the mill and smelter. The latter proved to be very interesting, as it is probably the only reverberatory lead furnace in the United States. About four o'clock we were told that we were through for the day and immediately hit the ties for Flat River.

Friday the party visited the Doe Run mill about one-half mile from Flat River. This is a new mill and quite different from the other mills; for instance, all ore is transported by belt conveyors and everything in the mill has its individual motor. After seeing everything there was to see here, we had a delightful oral quiz. At the conclusion of this Prof. Copeland announced that this would end the metallurgy part of the trip. We went back to the hotel and had a very good dinner, fried crappie "O. S." Professor Cox arrived about two-thirty and the rest of the trip was in charge of him. Mann left for Rolla to take up his duties in the summer school.

Saturday morning we started on the geology trips, first going to the Federal to look over their core room, then going out in the hills to see their manner of prospecting. In the afternoon we left the hotel in carriages bound for Bismarck; there we took the train for Arcadia. We arrived at Arcadia late at night and were shown to a nice bungalow run in connection with the hotel. This was by far the best place that we had struck on the trip. The hotel was nice and clean; the bungalow was nearly all windows, so there was a breeze blowing through it all the time, and the food was very good.

Monday we were up early and off for Pilot Knob. There couldn't have been a better day for the trip; nice breeze blowing all of the time. The mountain is only about two miles from the hotel, so we made this in no time; then we proceeded to climb the mountain, noting all of the time the test pits and open cuts from which large quantities of iron ore had been taken. After eating lunch, we walked across the valley to Shepard Mountain, where more ore occurs. On the way over we passed through the rifle pits occupied by the Union forces at the battle of Pilot Knob. Finishing our inspection here, we returned to the hotel and were joined by three more students.

Tuesday we were up at five to catch the train for Iron Mountain, where there are extensive workings. We spent the morning in looking over the old workings, the mine and the mountain. We got through a little before noon and at noon we took the train for Arcadia. Immediately upon our arrival there we got a bus and started for Graniteville to see the quarries and Elephant Rocks. We arrived at the hotel about 6:45—truly strenuous days these—and after supper, or rather two or three of them, we had a little quiz by Prof. Cox.

This ended the trip for five of us, while those who arrived late had to stay another day or so. The whole party consisted of Professors Cox, Copeland and Mann, and Bingham, Thomas, Willmott, Kline, Macomber, Smith, Elmore, Abbott and Broughton. The trip was a success from the word go, and the party cannot thank the professors enough for the pains they took with us in making the trip enjoyable as well as instructive.





The Senior Trip

AFTER many delays on account of inclement weather the date of the annual Senior Trip was finally set for March 12. So on that date Professors Copeland, Mann and McRae, accompanied by about twenty-five seniors, left for St. Louis to inspect the metallurgical and power plants in that district.

We were to meet in the lobby of the Marquette Hotel and most of the fellows succeeded in getting there on time though most of them regularly missed their breakfasts. The first day we visited the Edgar Zinc Co.'s smelter at Carondelet. We remained in this plant until

about 3:00 p. m., studying the roasting and smelting of zinc ores, and the manufacture of the clay retorts. From the Edgar plant we went to the Anheuser-Busch Brewery. Needless to say we enjoyed the inspection of this immense plant very much.

The next day we visited the Scullin-Gallagher Iron Works and watched the manufacture of all kinds of open-hearth steel castings, and spent an enjoyable time dodging overhead

cranes. We next went to the great plant of the Laclede-Christy Clay Products Co., which is probably the greatest clay working plant in the country. Here we saw the molding and burning of gas retorts, refractories of all kinds, sewer pipe, and many other clay articles. We were much impressed with the dozens of kilns and the large quantity of material handled. From here we went to the National Lead Co.'s

white lead works and were allowed to inspect all the processes in the manufacture of white lead, litharge and red lead.

The next day we went over to Alton, Ill., to see the lead smelter of the Federal Lead Co. Here

we saw the finest installation of Scotch hearths in the world; also the new Dwight & Lloyd sintering process, as well as the old pot roasters. The blast furnace department and the bag house were also objects of much interest. On the afternoon of the same day Dr. McRae took us out to see the plant of the East St. Louis and Suburban Railway Co., but the real treat in power plant inspection came when we went through the Union Electric Co.'s plant in St. Louis.





The next day was also spent in power plant inspection. The plant visited was that of the United Railways, which included also street car construction and a trip to the uptown substation in the company's special car to see the converters and storage batteries. This concluded the St. Louis trip and most of the bunch, being broke, returned to Rolla that evening.

The Joplin end of the trip, which included geology, mining, and last, but not least, milling, was begun about one week after the close of the St. Louis trip. This time we were under the leadership of Professors Cox, Forbes and Roesler, and, for the first day, Mr. Buehler, the State Geologist.

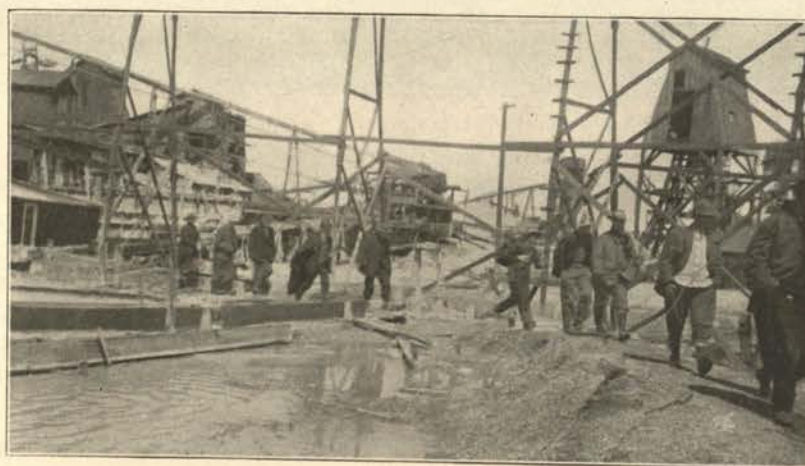
The first day was spent in viewing the Joplin methods of mining at the Oronogo Circle property, one of the largest and best mines of the district. We were greatly impressed with the speedy and cheap methods of handling ore at this mine. The afternoon was spent at the Coahuila Mill, which is managed by a graduate of the school, Mr. C. D.

Smith. Here we were first introduced to Prof. Roesler's system of mill inspection, which consists of answering some sixty-five questions. This furnished much amusement for the mill men, and they will no doubt long remember us.

The next day we spent a short time underground at the A. B. C. mine, then walked over to the Goodenough property, where electricity is used throughout. This practice is new in the district, but is coming into very general application.

The last day was spent at the Carterville property of the Continental Zinc Co., both in the mine and mill, part of the fellows returning to the Coahuila to go underground. In the afternoon we went to Crystal Cave, where the great calcite crystals interested us very much.

This completed one of the most successful senior trips ever taken. We were shown every courtesy by the firms in St. Louis and the operators of the Joplin district, and we were freely allowed to visit the largest plants in St. Louis and the most important mines in the Joplin district.





St. Patrick's Day

ON March 18th St. Patrick paid his annual visit.

He was met at the Grand Central Station by all the companions of the order, a number of the princes of the noble blood, and all of his faithful followers near and in Rolla. His Saintship, dressed in kingly robes, arrived on a beautiful float. His escort, a bodyguard of picked soldiers, followed close on to the wheels of the float. After carefully observing the assembled crowd and saluting many of his favorites, he commanded his guard to organize the crowd in a line of march. Then, as by a stroke of Providence, the very bottle containing the snakes which once inhabited the Emerald Isle, came from somewhere and took its place in the ranks of the followers.

Soon everything was ready for the march, and the parade, led by the Rolla band, started. The followers had been adorned with bright green bunting and flags; so the line was a display of bright decorations.

It was an unusual pageant for Rolla, and the crowds on the sidewalks cheered as it passed on the way to the campus.

The ceremonies on the campus opened by locating the Blarney Stone. The Saint himself was transitman, and showed his skill by locating the exact spot, after being compelled to close a difficult traverse. The stone was brought to the decorated entrance of Norwood Hall and laid at the feet of the honored Saint.

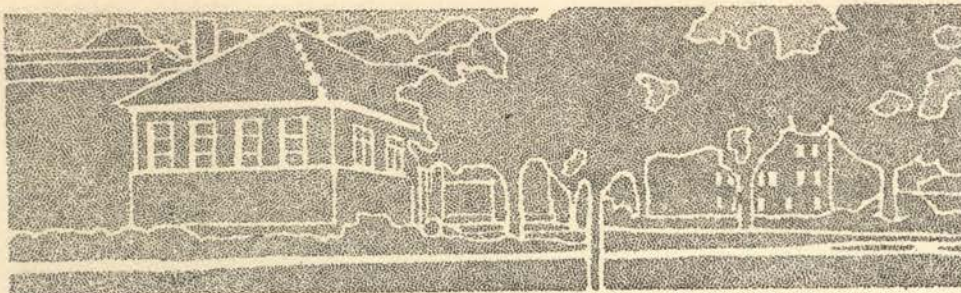
"Kow-tow" was the royal command, and all bent in reverence before his Saintship. This

command was soon followed by a command to arise, and all stood erect with bared heads, ready and eager to hear the message of the Saint honored by King George III. of England. He brought pleasant news, and expressed his pleasure in finding the campus changed by the addition of a new building, and that plans for a new gymnasium had been drawn.

After this pleasant and instructive speech his Saintship announced that many of the seniors had unblemished records, and would be knighted in the Order of the Knights of St. Patrick. So with an oath of allegiance each senior in good standing was admitted to the order. A great cheer arose when Professor Eggleston was escorted by the Saint's bodyguard to the stone, and took the oath of allegiance. Everyone now joined in singing "Saint Patrick Was an Engineer," and sang until the royal escort fired a salute, which closed the ceremonies. The Saint was impersonated by H. H. Nowlan. The committee was as follows: R. G. Knickerbocker, chairman; H. W. Shaw, A. W. Gleason, J. N. Webster, C. Y. Clayton, J. Hopkins and J. A. Murphy.

This afternoon St. Patrick entertained at Charlie's. We all had a great time dancing, playing pool and bowling. It is reported some of the fellows did not eat supper, but played billiards right up to the time of the opening chorus of a delightful entertainment given at Mechanical Hall by the Athletic Association.





Senior Class 1911

SENIORS OF 1911





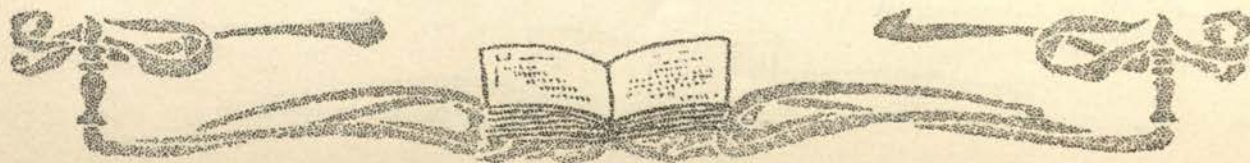
University of Missouri
School of Mines and Metallurgy

FORTIETH ANNUAL COMMENCEMENT

FRIDAY, MAY TWENTY-SIXTH
Nineteen Hundred and Eleven
10:30 o'clock a. m.

PROGRAM

Music, March	"Napoleon's Last Charge"	Paull
	FALKENHAINER'S ORCHESTRA	
Invocation		REV. J. S. ALLEN
Music, Overture	"Raymond"	Thomas
	Commencement Address	
	"The Individual, the State, and the Nation, in the Development of Our Mineral Resources"	
	DR. JOSEPH AUSTIN HOLMES	
	Director of the Bureau of Mines, Department of the Interior, Washington, D. C.	
Music, Idyl	"Softly! Unawares!"	Lincke
Address		DR. ALBERT ROSS HILL
	President of the University of Missouri	
Theses		Read by Title Only
Conferring of Degrees		By the President of the University
Music, Selections from the "Chocolate Soldier"		Strauss
Benediction		REV. J. S. ALLEN
Music, March	"Miners"	Henniger





Degrees Conferred in 1911

Engineer of Mines

Robert Hardy Bedford, B. S., 1906

Walter Coffran Richards, B. S., 1907

Ira Lee Wright, B. S., 1907

Bachelor of Science in Mine Engineering

Maurice Merton Albertson

Ernest James Allen

James Keller Beach

Raymond Alexander Bingham

True Walter Blake

Hector Julio Boza

Benjamin Horace Cody

Robert Nathaniel Copeland

Milan Harrison Detweiler

Carlos Enrique Elmore

Edward William Engelmann

Monroe Farrar

David Lawton Forrester

Germin Garcia Lozano

Dibrell Pryor Hynes

Otto Allen Lunak

Sumner Cooley Macomber

Christian R. Miller

Robert Bruce Mitchell

Harry William Lee Porth

Arthur Gustav Pudewa

Shiv Raj

John Elmer Schultz

Roy Elliott Sprague

Harvey Louis Tedrow

Frank Edgar Townsend

Bachelor of Science in Metallurgy

Oscar Alan Randolph

John Perry Walker, Jr.

Duncan Slater Smith

Bachelor of Science in General Science

John Charles Clark

Eva Endurance Hirdler

James Edward McGoughran

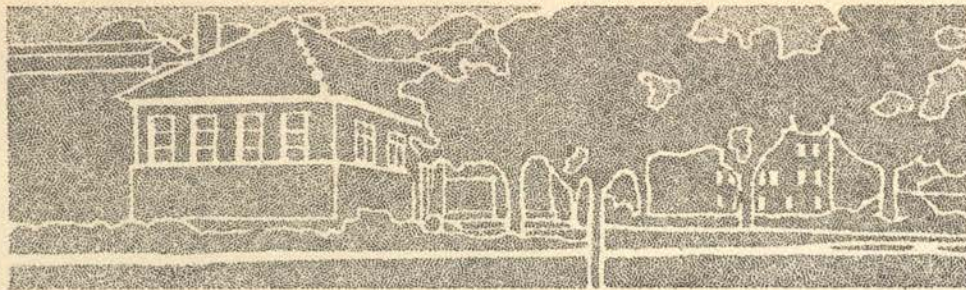
Anton Frederick Karte

Samuel Paul Lindau



BOOK VI.
ORGANIZATIONS.

ROLAND

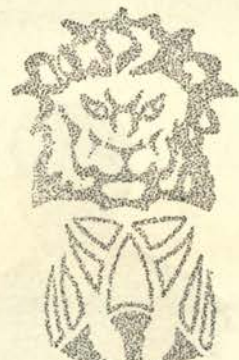


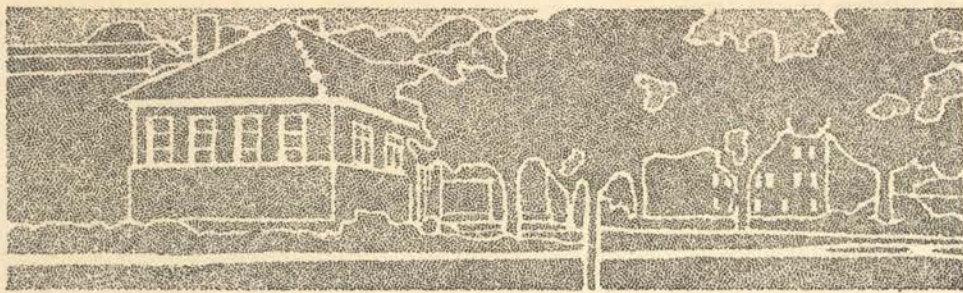
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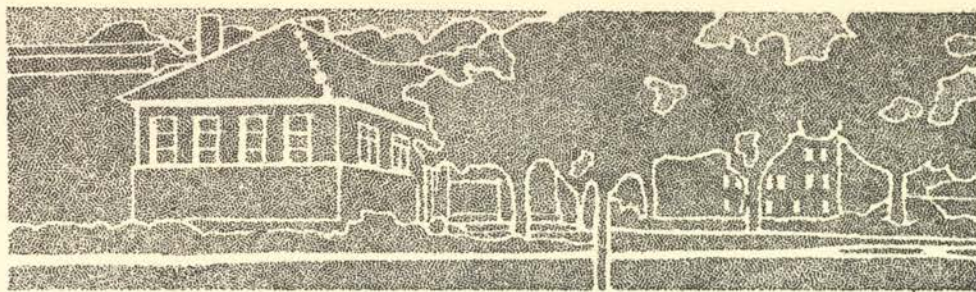


THE ROLLAMO

ORGANIZATIONS







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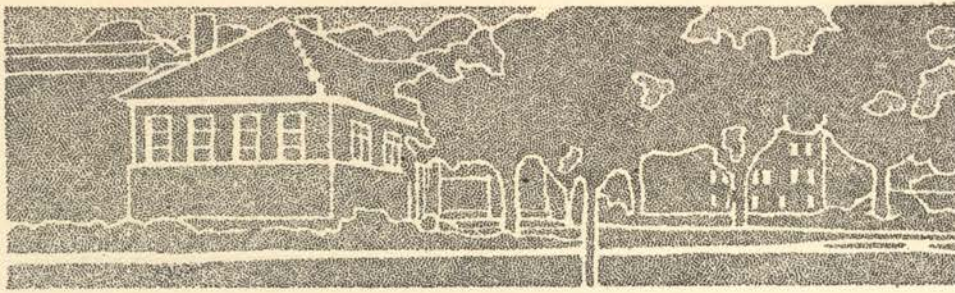
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A. W. HACKWOOD





Editorial

IT is proper at this place to make some acknowledgment to the many people to whom we are indebted for aid in getting out this work. The concerts and musicales would have been of doubtful success had it not been for Mr. Frank Henniger, of the Rolla School of Music, and Misses Mary I. McCrae and Roberta Rowe, whose singing was the feature of several programs. The art work in the book is due not only to Mr. Irwin, of the board, but in a large measure to Mr. Walter Gammeter, of the Class of 1915. The class write-ups are from the pens of H. I. Brooks, Lawrence Collins and J. W. Shotwell. Mr. Shotwell also prepared the Parker Hall and "Saint Pat" articles. Among the alumni, Mr. A. B. Bartlett, of Cheyenne, Wyo., who, as a member of the National Irrigation Congress, won considerable fame because of his able opposition to the Pinchot policies, has written us an able article on some of the aspects of the ultra conservation movement. Mr. G. A. Duncan has, as usual, given us aid and inspiration in many ways. But it is to Mr. D. C. Jackling that the heartfelt thanks of the Board, the student body and the alumni are especially due. Had it not been for his financial assistance this Rollamo could not have been produced in its present form. Mr. Jackling has aided so many school enterprises and is so well known to the students that more extended narration of his helpful attitude is unnecessary.

The many who have aided us in so many

ways, and whose names we have not space to mention, we desire to thank for their willing and effective work.

△ △ △

The dedication of the Rollamo '12 to Mr. G. A. Duncan of the Class of '74 will, we feel, meet with general approval. This is an anniversary year, Mr. Duncan is the oldest alumnus, and he has always shown an interest in his Alma Mater that all alumni could well emulate.

A short sketch of Mr. Duncan's professional career, told in his own inimitable language, appears below.

Nelson, Nevada, November 10, 1911.

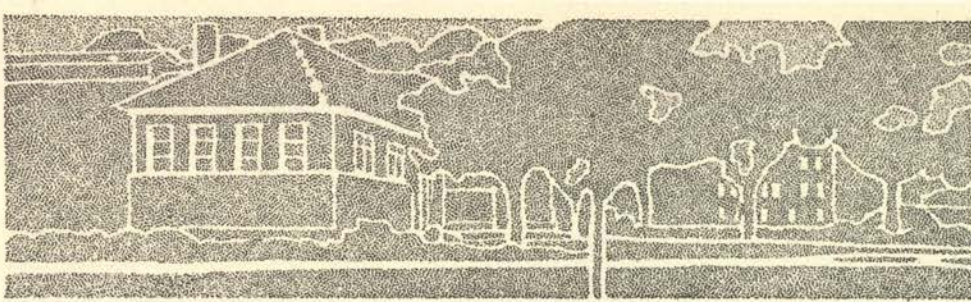
Editor, The Rollamo,
Rolla, Mo.

Dear Sir: Your letter requesting material for a short biography is at hand.

Replying would be less embarrassing if I could have any belief that the contribution will prove of service or interest other than as a space filler and conformity to custom, but I appreciate the compliment you young men wish to confer upon the older alumni, and, while others of them are able to render a better accounting than I can, that fact seems not to relieve me of the present responsibility.

Since writing that word "biography," it has been insisting upon my attention as suggestive of a closed career, so, to get it off of my mind, I am going to state right here that I am not





yet done, and that I expect to be happily on the job for many years to come.

Forty years from now some editor of the Rollamo will get even with you boys for me, by confronting you with a similar day of judgment, and when you lay aside the letter of summons commanding you to stand and tell what you have done with your life, and settle back in your chair to think it over, you may, as I do now, regret that you have done so many things that you ought not to have done, and left undone so many things that you should have done, and verge towards the conclusion that there is no health in you.

After graduating in 1874 I went to Boulder, Colorado, arriving there on July 6th with a long-handled shovel in what seemed to me the deepest tail race ever devised by any "enemy of labor." Later a genial young Irishman and I became the elevators which delivered brick and mortar to the skilled workmen who were building the stack.

We finally got the smelter into good operation and after pulling slag pots for a while I was given charge of the furnace, which work I abandoned to become assayer at a chlorination mill near the old mining camp of Caribou, in the Boulder country. When the chlorination ceased to be profitable on the Caribou ores, I returned to the Boulder smelter as assayer and superintendent, leaving that position to take the management of The Boulder Sampling Works, an ore buying company of The Boston and Colorado Smelting Co., which was the pioneer in the mining regions of America in the reduction of refractory ores. This company later sent me into the Clear

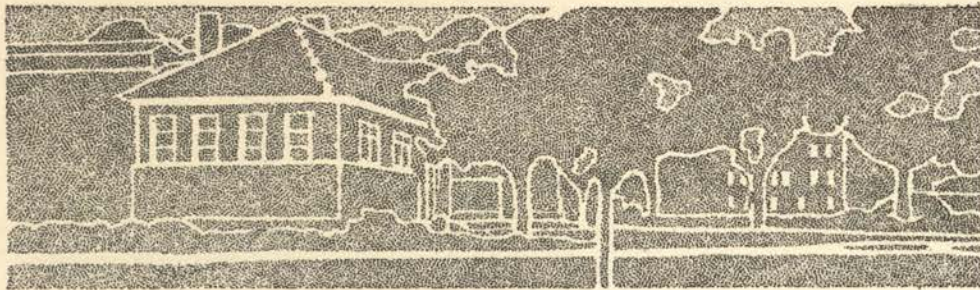
Creek country of Colorado to manage their business in Georgetown and Lawson, and then called me to assist in the management of their various auxiliary plants, making my headquarters at their new smelting plant at Argo, Colorado.

In this latter position my duties were varied and included a study of the fire clay material made at their brick plant at Golden for the furnaces at Argo, which resulted in displacing the soft mud, hand-made fire brick, by stiff mud, machine-made brick, these being the first machine-made fire brick manufactured west of St. Louis, where I got the information which led me to put brick-making machinery at work in Golden, and so start the Colorado clay industry on new and improved lines. The arches of our reverberatories at Argo were lined with "silica brick" imported from Cornwall at at cost of \$140.00 per thousand. I introduced the manufacture of silica brick at Golden, saving \$100.00 per thousand on the first shipment, and from that time on the making of these brick grew into general practice throughout the smelting regions of the West.

In my experiments in mixing and burning the many clays about Golden I came upon a variety of colors that seemed to me would be attractive in ornamental construction, and, if not the first, I believe I was among the first to urge upon architects the fact that there was no reason why building brick should be red, and that much beauty would be added to our cities if various lighter colors were used in brick construction.

Yielding to a long-growing desire to engage in mining, I left the employ of The Boston &





Colorado Smelting Co. and leased a mine in Clear Creek County, Colorado, shipping my concentrates to Argo until the workable ore was exhausted.

Since that time mine and mill management, examinations and reports, and consultation occupied the years up to 1907, when I entered upon a search for a gold vein inviting enough for exploitation and development for myself, and in the last part of this work I am now engaged.

In the first days of successful cyaniding of gold ore at Mercur, Utah, I took up the slime problem, which rapidly became an object of general study. Among a number of plans that I tried for extracting clear liquor from slime, the one of immersing in slime a box frame one foot wide, two feet long and two feet deep, covered with felt, applying internal suction, and getting therefrom a clear solution from which gold was precipitated, promised to be most worthy of development. At the time I reached this conviction pressure of work elsewhere stopped my experiments, and eight months later, in the same town where I had done this work, and employing the same men who had been working for me, Mr. George Moore received his most excellent and useful inspiration, the canvas-covered filter frame, but one inch thick, though large in its other dimensions, to which internal suction was applied.

To Mr. George Moore is due the credit of assembling a great filtering area workable as a unit, and it is because of his thought of a thin filter leaf or cell that the treatment of

slime containing gold and silver in solution has become an exceedingly important branch of metallurgical work.

The first practical application of Mr. Moore's system was made at the Mercur mill in Utah, where, after an expenditure of \$55,000.00, the system was condemned and taken out, the failure being due to the impractical construction of his filter frames and the imperfect discharge of the tailings by his method of internal air pressure.

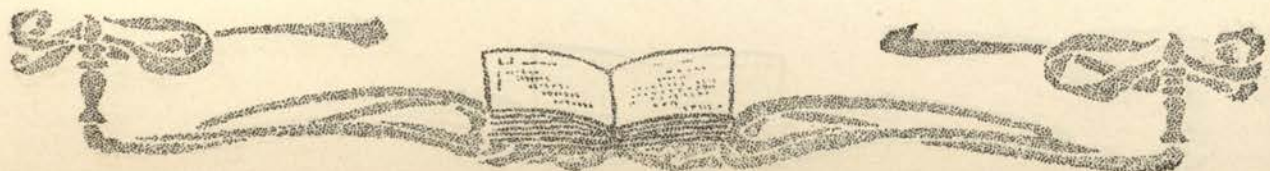
About that time I had occasion to treat cyanided slime, and, believing that Mr. Moore had the right system, though bad construction, I made my cell frames of three-quarter inch iron pipe, perforated, and applied an internal water pressure under low head for discharge of the tailings.

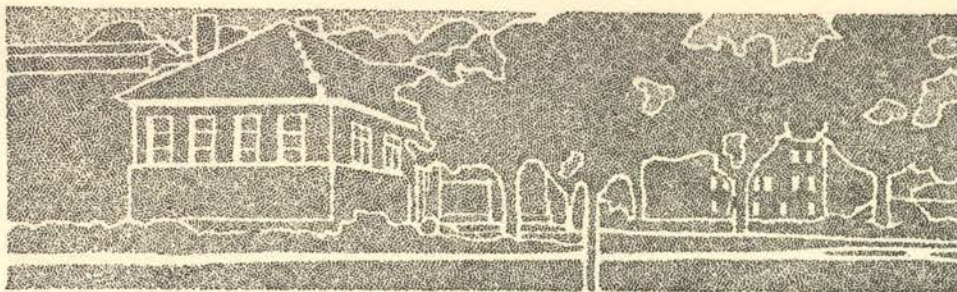
I was the first man to make use of and to patent the metal pipe filter frame and the internal water pressure for tailings discharge, and without those two features no application of the filter cell or leaf system is either attempted or possible, and to the adoption of those two features the system as now practiced owes its success.

I find that I have too greatly extended this letter, for which I crave your pardon, but perhaps you will gather from it some guess as to how one man has spent his working hours out of his home (which, after all, do not cover all of one's life), even if there be little in it which you wish to present to your readers.

Cordially yours,

(Signed.) G. A. DUNCAN.





Conservation

As It Appears to an Engineer

By ALBERT B. BARTLETT, M. S. M. '07,
Vice-President of The Bartlett Engineering Company, of Cheyenne, Wyoming.

CONSERVATION means elimination of waste, but as now applied to our natural resources is construed into prevention of use. This country has been flooded by bulletins and magazine articles emanating from the Washington (D. C.) press bureau of Gifford Pinchot, the arch enemy of progress, who makes his arguments entirely unhampered by facts. And, moreover, most of Pinchot's self-advertising is done at the expense of the funds of the Forest Service instead of using them to fight forest fires.

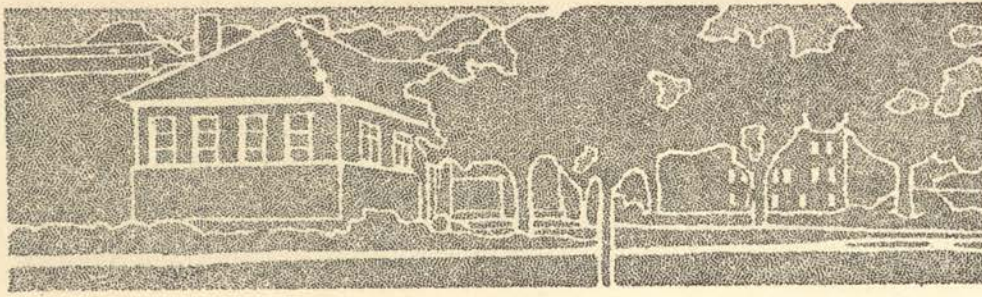
Ever since the formation of this United States of America, there has been a frontier which required settlement, and reclamation. Our hardy ancestors pushed westward into the primeval wilderness of Ohio, Indiana and Illinois, cleared the land of the timber, raised more valuable crops of grain, fruit and other food, built homes, while towns, cities and states developed under the policy of Encouragement and National Development. Suppose that Pinchot, the crime of this century, had had his way then; if those immense timbered areas had been withdrawn from all settlement and development, as the Western forests are now, they would still be a primeval wilderness.

The mining laws, giving the prospector the fruits of his discoveries; the homestead law, giving a man a home on land which was bought under the Louisiana Purchase or ac-

quired by treaty, costing Uncle Sam only five cents per acre; the Desert Act, and the Carey Act, giving land to those who would irrigate it,—all these were on the principle of Encouragement and National Development, and as a result our pioneers have been conquering the wilderness, reclaiming the desert and building up a great and prosperous nation.

But of late years, owing to the policy of Pinchot, the political conservationist, and his followers, we have been struggling against a policy of Discouragement and Strangulation. "The public has been and is being taught, at the expense of the government, that the great corporations engaged in exploiting our mineral resources are wasting a precious heritage that belongs to 'all the peepul' (as Pinchot expresses it); and that unless corporate interests are prevented from acquiring additional resources from the unappropriated public domain, industry and commerce will starve for want of raw material within a few decades. There has seldom been a grosser misrepresentation of facts foisted upon a credulous public than the arguments of the political conservationists who are seeking to demoralize the established policies of our republic by appealing to the popular prejudice against the corporations and trusts under the guise of conservation." These are the words of Dr. E. R. Buckley, formerly State Geologist of Missouri. However, this does not tell all. The prosecu-





tions of this government policy extend to the poorest prospector and homesteader. To explain the present policy originated by political faddists, backed by statements wilfully false, or adroitly juggled, I will take up the different features in order.

1. The mining laws provide that any citizen of the United States can go upon the public domain and if he discovers a lode of ore, can proceed to mine it, after complying with a few simple requirements, and has a perfect right to all the valuable minerals he finds. Under this law he can take as much land as he likes, can sell it, or acquire perfect title by doing \$500 worth of work on each claim. Under this law the West was developed. The prospector packed his burro with gold-pan, pick and shovel, a slab of bacon and a sack of flour, tied on his tarp, and with his gun over his shoulder crossed the Great American Desert, and among the Indians and other dangers, sought wealth in the unexplored and unmapped mountains. Fully 90 per cent of the metals mined was the result of this liberal policy of Encouragement and Development. But look at the situation now. The poor prospector (and he is nearly always poor) may accidentally discover his mine on a forest reserve, and if so he is fought, harassed and prosecuted until he has to abandon his claim. Or if not on a reserve the process of getting a patent is now delayed so in the General Land Office, in Washington, D. C., that the investors who may be putting up money to erect mills, etc., get discouraged and want to quit. The forest service boasted that in one year they defeated 4,000 entries in the State of

Colorado alone, which is much more of a crime than letting a few fraudulent entries pass through.

2. Take coal. One of Pinchot's delusions is that in 100 years it will all be gone. In my talk at the National Irrigation Congress, I proved by the figures of the United States Geological Survey, that we have coal to last the United States 7,000 years. Now listen, whatever the amount of coal is it will all be used up some day—think that over. Now think about this: By the government's having withdrawn the water power sites they have prevented the construction of hydro-electric power plants, which in full operation could save the consumption of \$4,000,000,000 worth of coal annually. Is this conservation? The apologists of conservation claim they are keeping the power sites from being monopolized by a big corporation, a lot of absurd rot. Did you ever consider the futility of trying to think for future generations? Do you know that at one time much concern was felt because the whales were all being killed off and the world would soon be in darkness, because there would soon be no more whale oil to furnish light? Are you aware that once, about a hundred years ago, certain forests were reserved for the purpose of supplying tall timber for masts for battleships, it being feared that if this timber were used up we could build no more battleships and would be at the mercy of our enemies? Just as foolish as this is the proposition to keep our coal fields untouched for the benefit of future generations. Politician Pinchot, posing as the friend of "all the peepul," says he is in favor of using the coal,





but his policy has been an absolute tie-up. The government has increased the price of a section of its coal land from \$12,800 to \$300,000 and this has done more to increase the price of coal, benefit the coal barons and hurt the people, than anything Pinchot ever did to help the people. In fact, it is stated that Pinchot is indirectly interested in some big coal companies in the East, so possibly "there's a reason." Consider also the possibilities of getting heat and power from the sun, the wind, and the tides and see if coal will be such a necessity after 7,000 years.

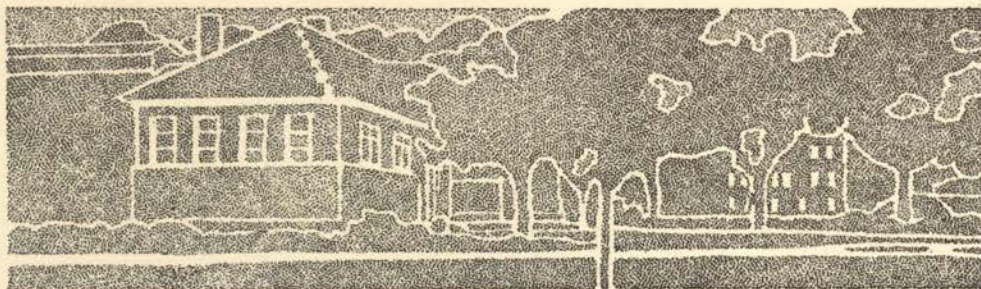
3. Alaska in the last ten years has increased only 767 in population as a result of this withdrawal policy. The political conservationists make much capital out of the alleged monopolizing of Alaska's coal by the syndicate. As a matter of record, there are 21,000,000 acres of coal land there, of which 30,000 acres have been filed by all claimants combined and the syndicate only had options on 5,000. Does this look like monopoly? "When Pinchot, the high priest of conservation, the prince of shadow dancers, recently visited Alaska to gloat over his handiwork of empty houses, deserted villages, dying towns, arrested development, bankrupt pioneers and the blasted hopes of sturdy, self-reliant American citizens, it is a striking comment on the law-abiding character of the people that he ever came back at all."

4. "We have in this world examples of people who carry into practice the theories of the doctrinaire conservationist. In equatorial Africa live 160,000,000 graduate Ethiopian conservationists. Their resources are as un-

impaired as when imperial Carthage was ground to dust under the iron heel of the Roman Republic. Their resources are the same as when Caesar rode at the head of his conquering legions. They live in one grand forest reserve, the guardians of which are not a horde of tax-eating forest rangers, but industrious denizens of the jungle, who are self-reliant enough to pick up every morning a club to kill a snake for breakfast. Their contributions to civilization and progress have been slavery and cannibalism; but they are conserving their resources. Each and every one of these Senegambian gentlemen is entitled to receive from Gifford's correspondence school the degree of 'Doctor of Conservation.'"

5. In respect to agricultural land claims the government is not only unjust and unbusiness-like, but illegal. Settlers are lured to the West by the wording of the homestead and desert laws, which say that generous Uncle Sam gives you land free if you live on it and cultivate it. After the unfortunate homesteader has lived on the claim until all his funds are exhausted, he naturally leaves his homestead for a greater or less time to earn a living. Government spies are on the job and contest his claims because he left it, and with no money to fight a half dozen spies, where is your poor homesteader? An old maid filed on a dry farm near Cheyenne, and, being unable to make a living from crops, did sewing for the neighbors, which naturally took her away from her claim, and the government took it away. A lady 65 years of age took up a desert claim and, having no stream near by, had a well drilled, put in a windmill, irrigated 20 acres





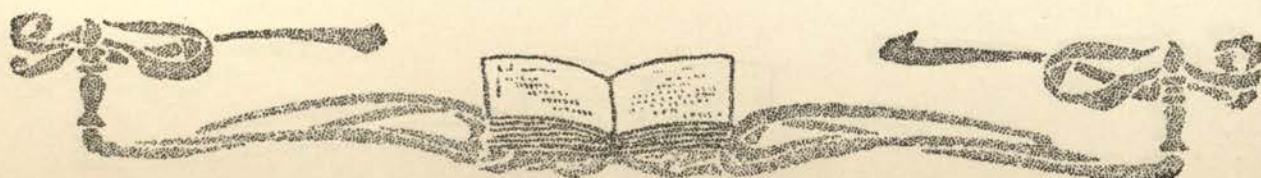
of land, and raised crops, built a house and barn, complied fully with the law, spending \$1,500 on improvements, when the law required only \$480. But with six paid special agents and a trial before their own officials, the government beat this now penniless old lady out of her last chance for a home. Isn't this small business for our great Uncle Sam? It's enough to make a minister jump up and down and swear like—well, like a mining engineer, anyway.

Now, boys, I realize that this Rollamo can't devote too much space to the dry stuff an old grad sends in—but, take it from me, this is real material. We as practical men know that development of our resources should be encouraged. Development must be profitable, and he who makes the desert bloom should not be penalized.

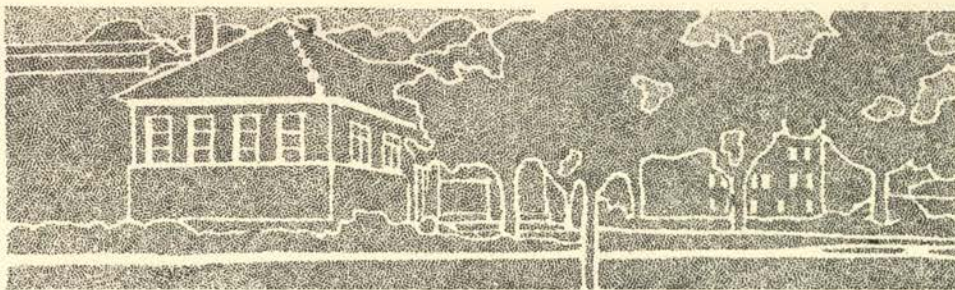
Before it's too late let me tell you to be on

the watch for conservation dope in these magazines: Collier's, Hampton's, Outlook, or Satevepost, or by these men: Roosevelt, Garfield, Pinchot, Geo. Maxwell, or F. H. Newell (Director of the United States Reclamation Service and never surveyed a ditch in his life). They are in it for politics only and do not hesitate to build their inspirations upon foundations of falsehoods.

You will see them advocate leasing by the government, but don't fall for it. Leasing of coal and oil is just what the present trusts want; they know that leasing cannot be made a success, will destroy competition and force prices up. It will retard development. It is an experiment, a Utopian dream of the fanatical Pinchot, but worse than a nightmare to the unfortunate ultimate consumer who will have to pay out of his pocket the royalty the government gets and the toll of their inefficient political methods.



ROLAND



1912





DR. E. R. BUCKLEY

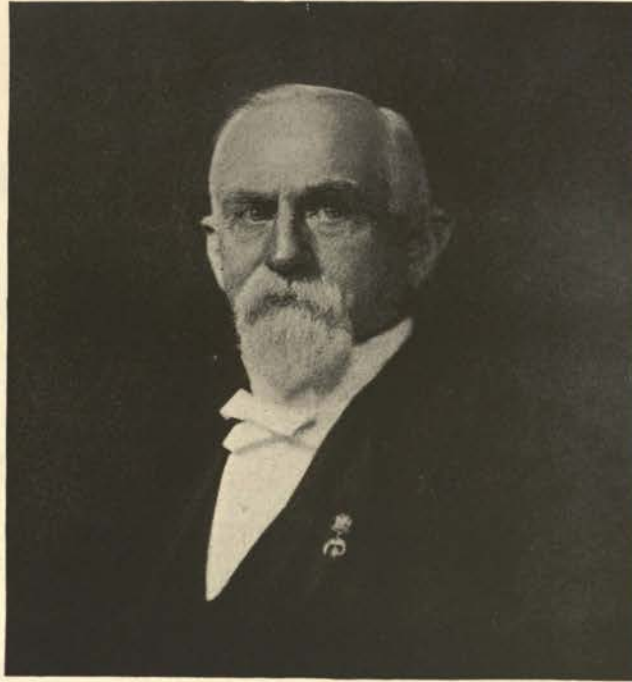
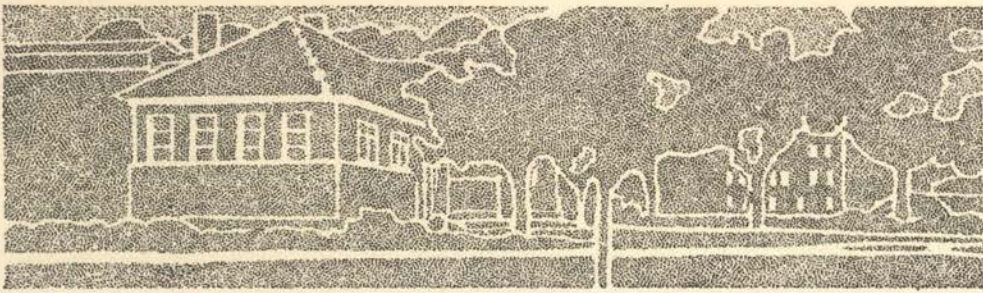




Ernest Robertson Buckley

ERNEST ROBERTSON BUCKLEY, whose recent death was so deeply regretted by all connected with the School of Mines, was a native of Wisconsin and a graduate of her University. He had, however, been long connected with the Missouri Geological Survey at Rolla, and with various Missouri mining enterprises; thus he became well known at the School of Mines, in whose work he was deeply interested. He was most widely known at the School of Mines, however, because of his sympathetic and helpful interest in young men, especially young men about to take up the mining profession. He had always kindly words of advice, and very often definite recommendations for such men, and the entire School of Mines feels that by his death they have lost a friend.



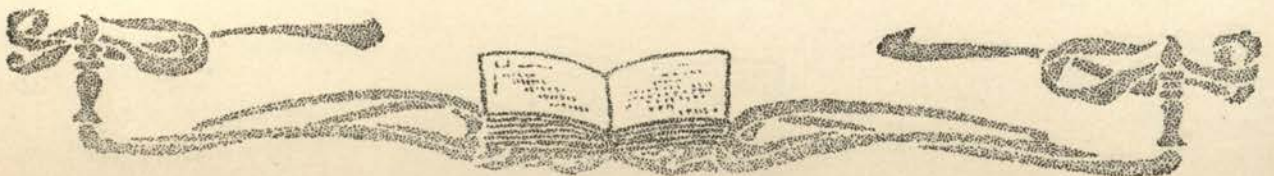


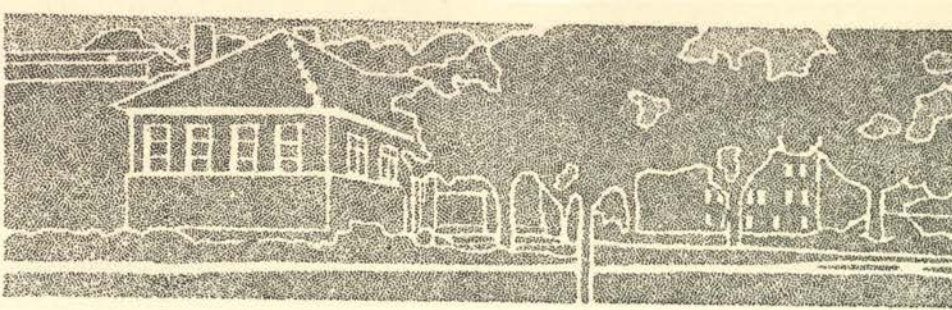
COL. JOHN KINGSTON

The Kingston Collection

COL. JOHN KINGSTON was born in Philadelphia, September 11, 1837, and emigrated to Missouri in 1856, settling at Sarcoxie, Jasper County. In 1861 he joined Company A, Craven's Regiment, of the Southern army and served throughout the war, receiving his discharge

upon the surrender of Gen. Kirby Smith at Shreveport, La. After the war he joined his family in Texas, whither they had been banished by the famous "Order No. 11," and later moved to Granby, Mo., where he entered the employ of the Granby Mining and Smelting Co. In 1870 he was appointed superintendent of the Granby Co., and filled that position until

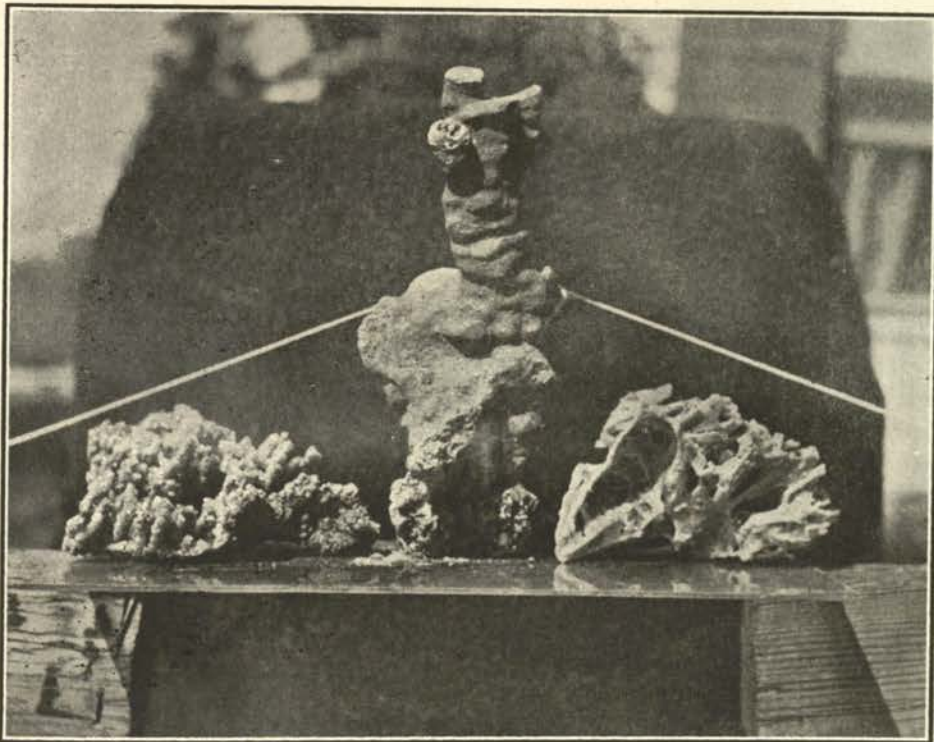




1908, when he retired from the active duties of the office. Col. Kingston is probably the most widely known man in Southwest Missouri. For forty years he has been prominent in mining circles in the Joplin area and he commands the confidence and esteem of all who know him.

He showed his friendship for the School of

Mines in 1910 when he gave us his fine collection of minerals and pseudomorphs. The collection contains some five hundred specimens from all parts of the country. The most valuable part of the collection is from Granby and that vicinity, and includes some very rare and perfect pseudomorphs of Calamine and Smithsonite after Calcite.





The Mining Association



G. S. THOMAS, PRESIDENT

G. S. Thomas, President

H. H. Nowlan, Vice-President

J. H. Chase, Secretary

F. W. Cody, Treasurer

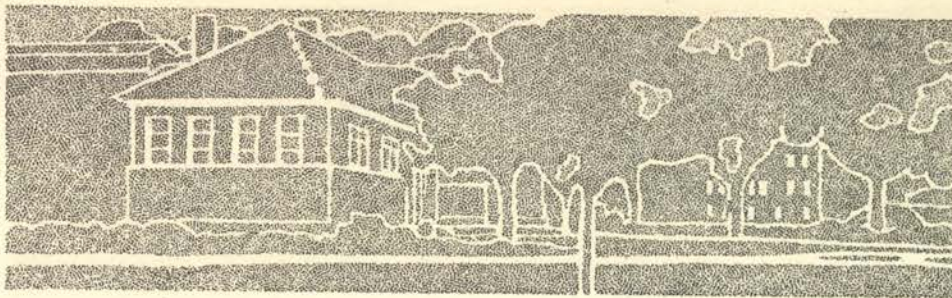
THE Mining Association is an organization for promoting student interest in mining affairs, and for giving the students experience in addressing assemblies. This it does by providing an opportunity for them to prepare and deliver set speeches on various subjects pertinent to mining, and permitting them to freely engage in the discussions following each talk.

The Association is run absolutely by the students, its active membership being limited to seniors and juniors. Practically all the talks given before the Association are given by the students.

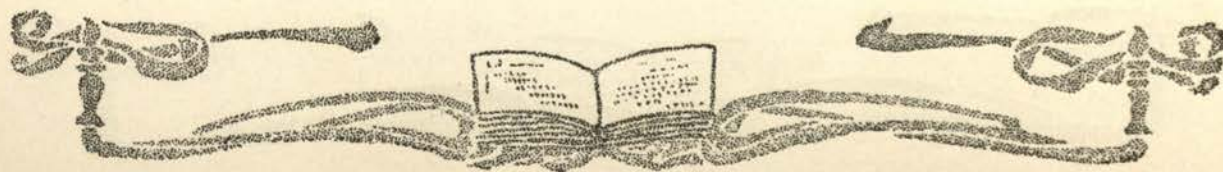
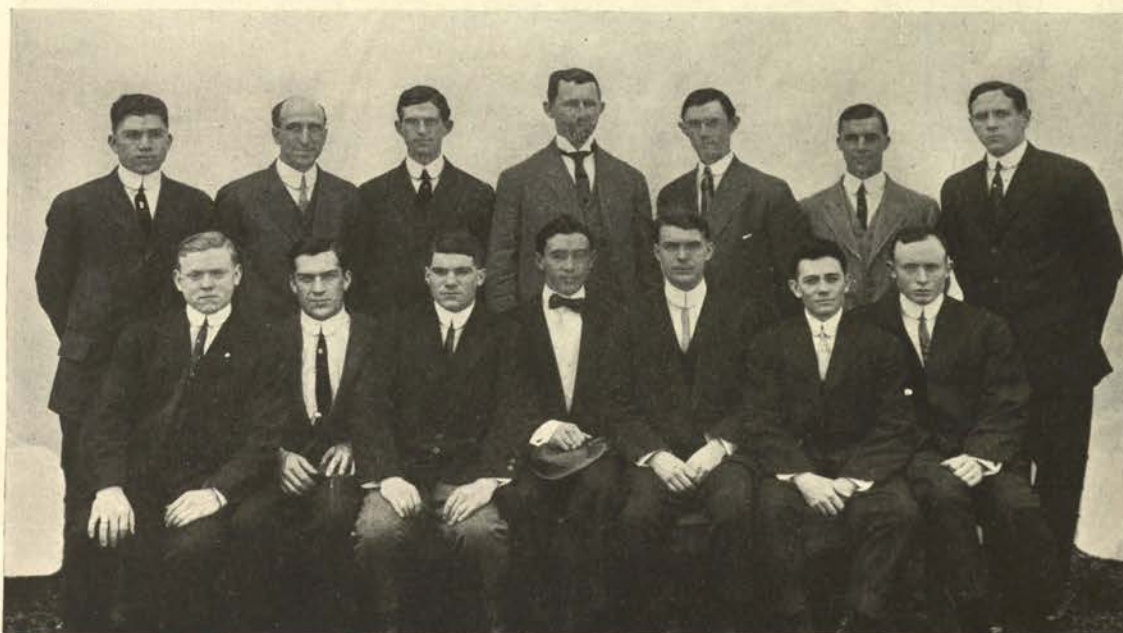
During the year just past talks were given by

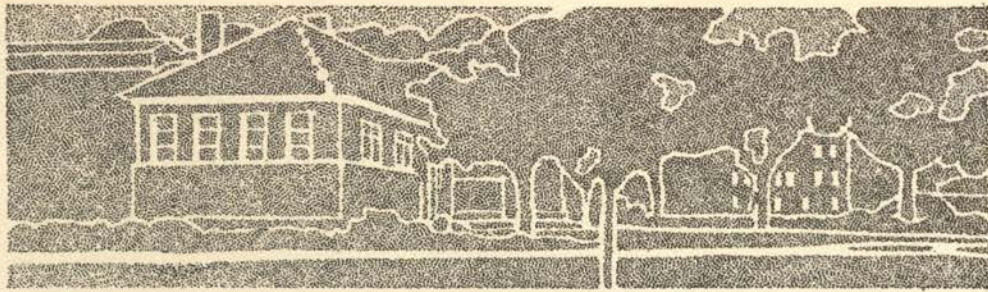
- Dr. J. A. Hielscher.....Canadian Mining
- H. F. Adams.....Fuel Oil
- T. A. Stroup.....Some Special Hartz Jigs
- Geo. Condon.....Mining at Butte
- R. E. Dye.....Mining Zinc in Wisconsin
- M. M. Albertson.....North Missouri Coals
- Dr. J. A. Hielscher...First Aid to the Injured
(Four talks)
- D. I. Hays..Milling and Magnetic Concentration of Wisconsin Zinc Ores.
- V. H. Hughes..Barite and Tripoli in Missouri





The Student Council





The Orchestra

Prof. V. H. Gottschalk

P. E. Coaske

A. Grosberg

E. Kahlbaum

R. W. Hayden

L. D. Lyons

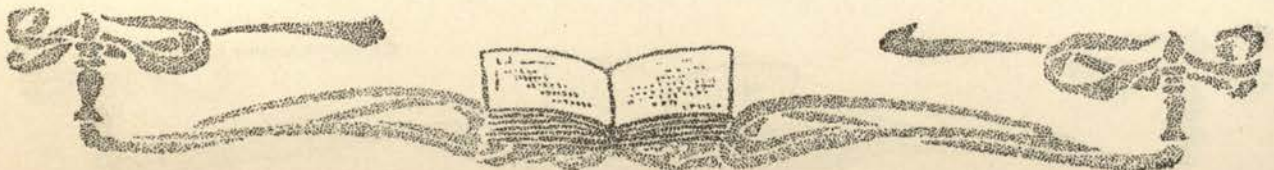
B. Edwards

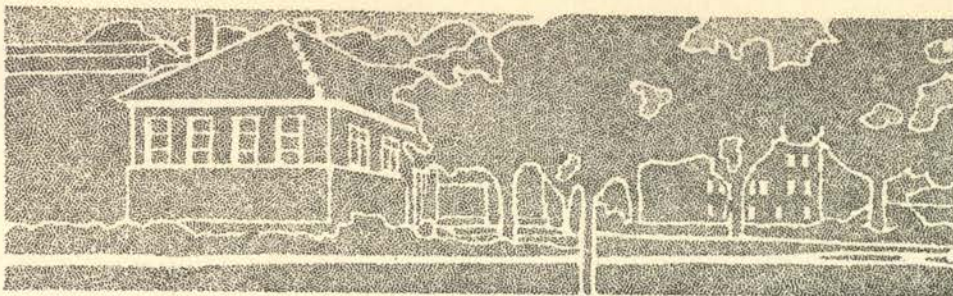
C. P. Kadell

L. W. Lacy

A. K. Hammond

T. R. Thomas





Y. M. C. A.



HAROLD P. FORD, PRESIDENT

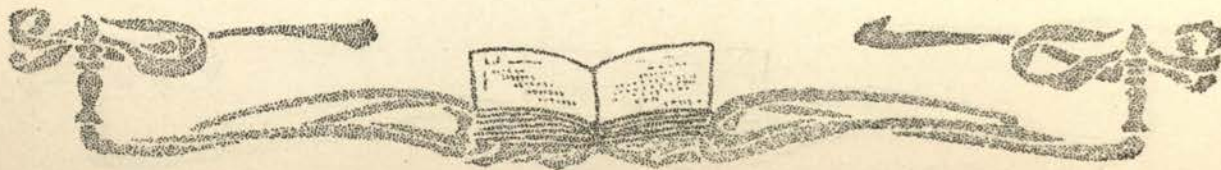
Harold P. Ford, President
Cairy C. Conover, Vice-President

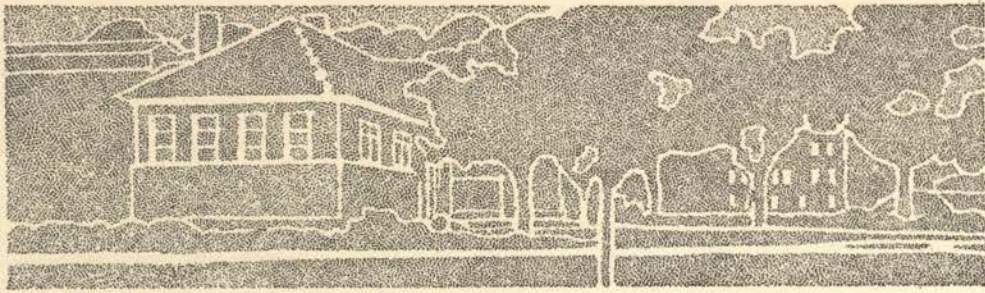
A. K. Hammond, Secretary
S. E. Hollister, Treasurer

THE Y. M. C. A. during the past year has been rather handicapped and has not been able to do much typical Y. M. C. A. work; however, the Lecture Course, which is at present the principal work of the organization, was presented to the students of the school and the residents of the city and was received even better than had been anticipated. The course was so well received, in fact, that the Association has con-

cluded that a six-number course should be given next year and have made arrangements for that number of the best attractions obtainable.

The Association will have quarters next year in the new Parker Hall and will have a comfortable and attractive reading and lounging room for the use of the members. This will be a valuable asset of the organization and we hope to have a full membership.





H. F. (Hank) Adams

D. E. (Andy) Andrus

Jas. (Hoppy) Hopkins

J. L. (Jim) Keelyn

J. A. (Murph) Murphy

F. G. (Frosty) Perry

R. J. (Bob) Poulette

E. G. (Torchy) Stoliker

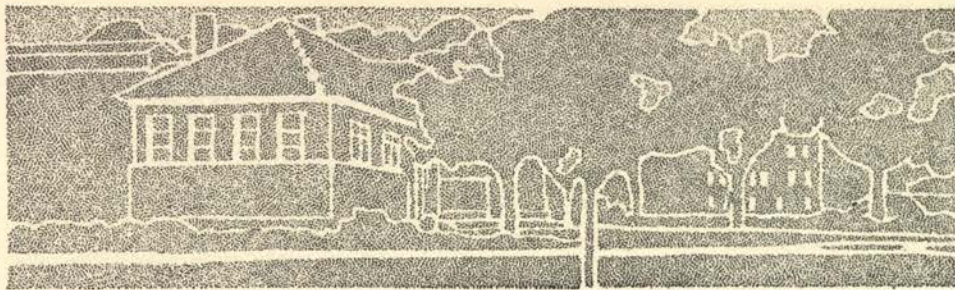
J. C. (Jake) Stroup

H. A. (Bird) Thrush

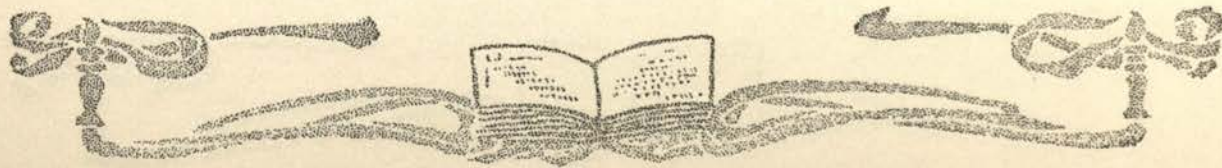
G. S. (Tommy) Thomas

M. E. (Peewee) Willmott





Q. V.





Lucky Strike Members

A. H. Cronk, Steward

O. N. Bribach, President

C. C. Conover

R. H. Maveety

J. S. Irwin

R. E. Dye

V. H. McNutt

T. Castillon

W. B. Gray

M. Cepeda

M. Skidmore

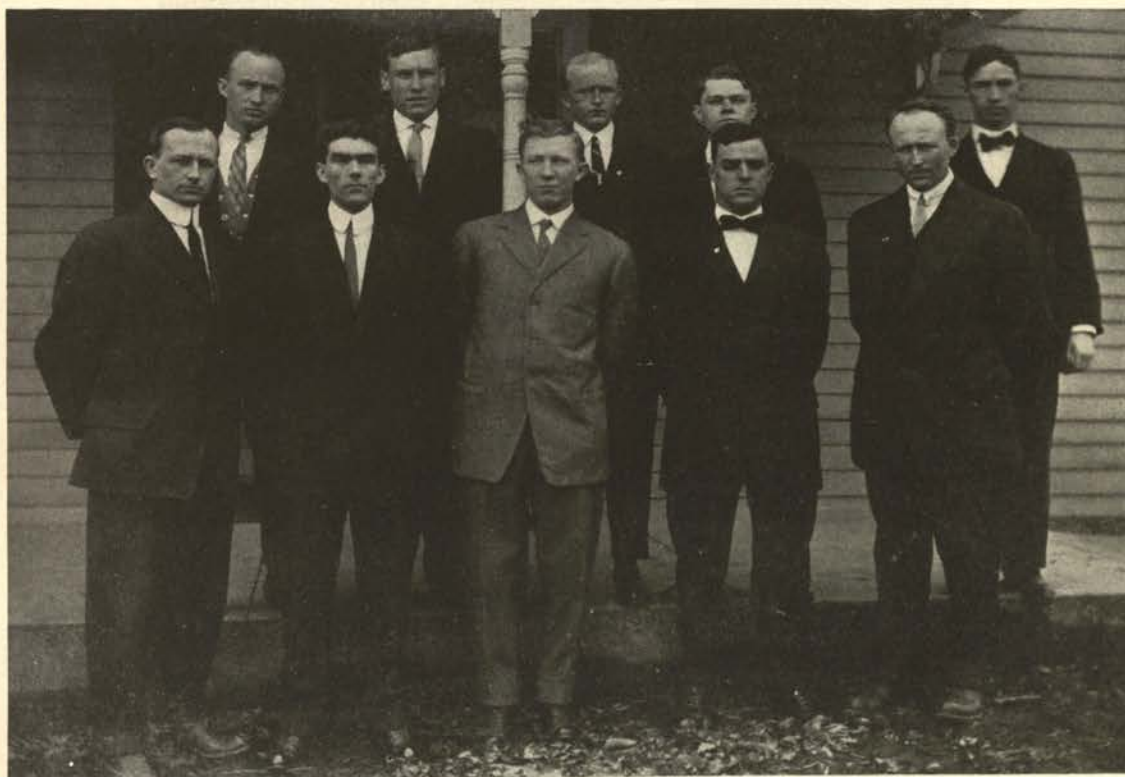
A. Fernandez

F. Hanni

E. H. Ruebel

E. A. Schroer





Grubstakers

H. F. Adams, Steward

J. Hopkins, President

T. A. Stroup

E. R. Morris

M. Albertson

P. E. Coaske

R. G. Sickly

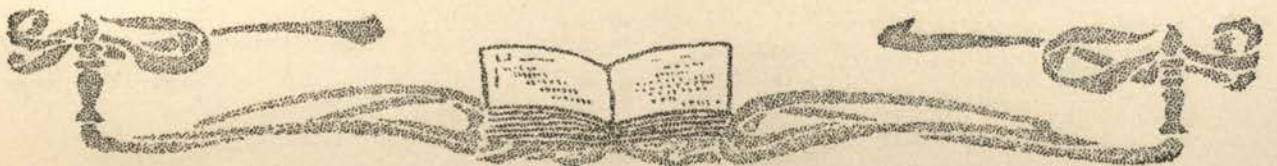
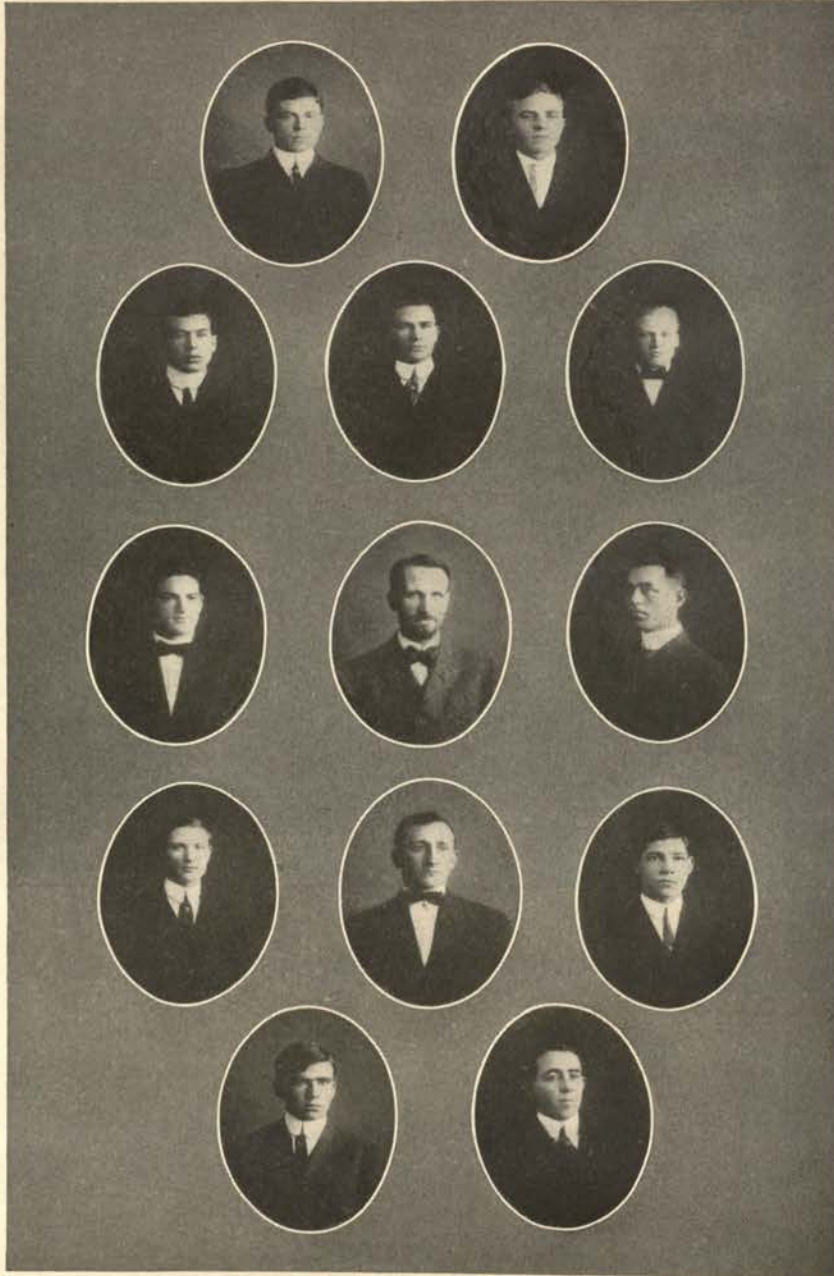
W. D. Work

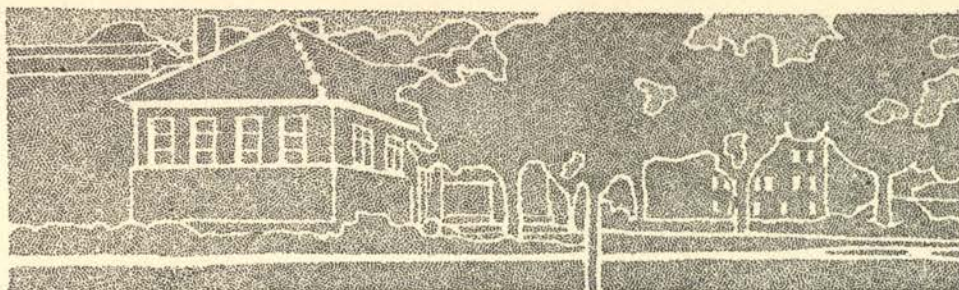
E. Halley

J. C. Stroup

W. F. Brewer







Henry Hudson

H. P. Ford

Harry Thrush

H. K. Sherry

F. G. Perry

E. G. Stoliker

Prof. Eggleston

Alex Grosberg

Harry Shaw

S. R. Hatch

S. E. Hollister

M. J. Kelley

R. M. Paulette



ROLAND



1912

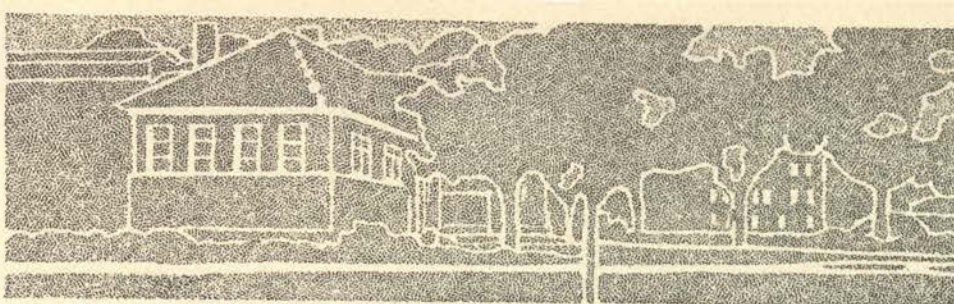


BOOK VII.
THE MENAGERIE



"The student should ponder the problem."
 "I shall scold the student."
 "The student does not grasp the import of the proposition."
 "The student should see the problem in toto."
 "The student should curtail the mental effort."
 "In order to avoid calculus, the student will plot a curve."
 "The student should take the bull by the horns."
 "The student must be on the alert."
 "I will put the student wise."
 "I will set a trap for the student and sting him."
 "I will exercise the student."



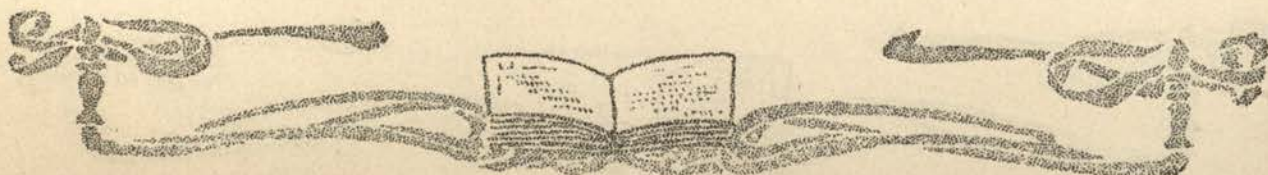


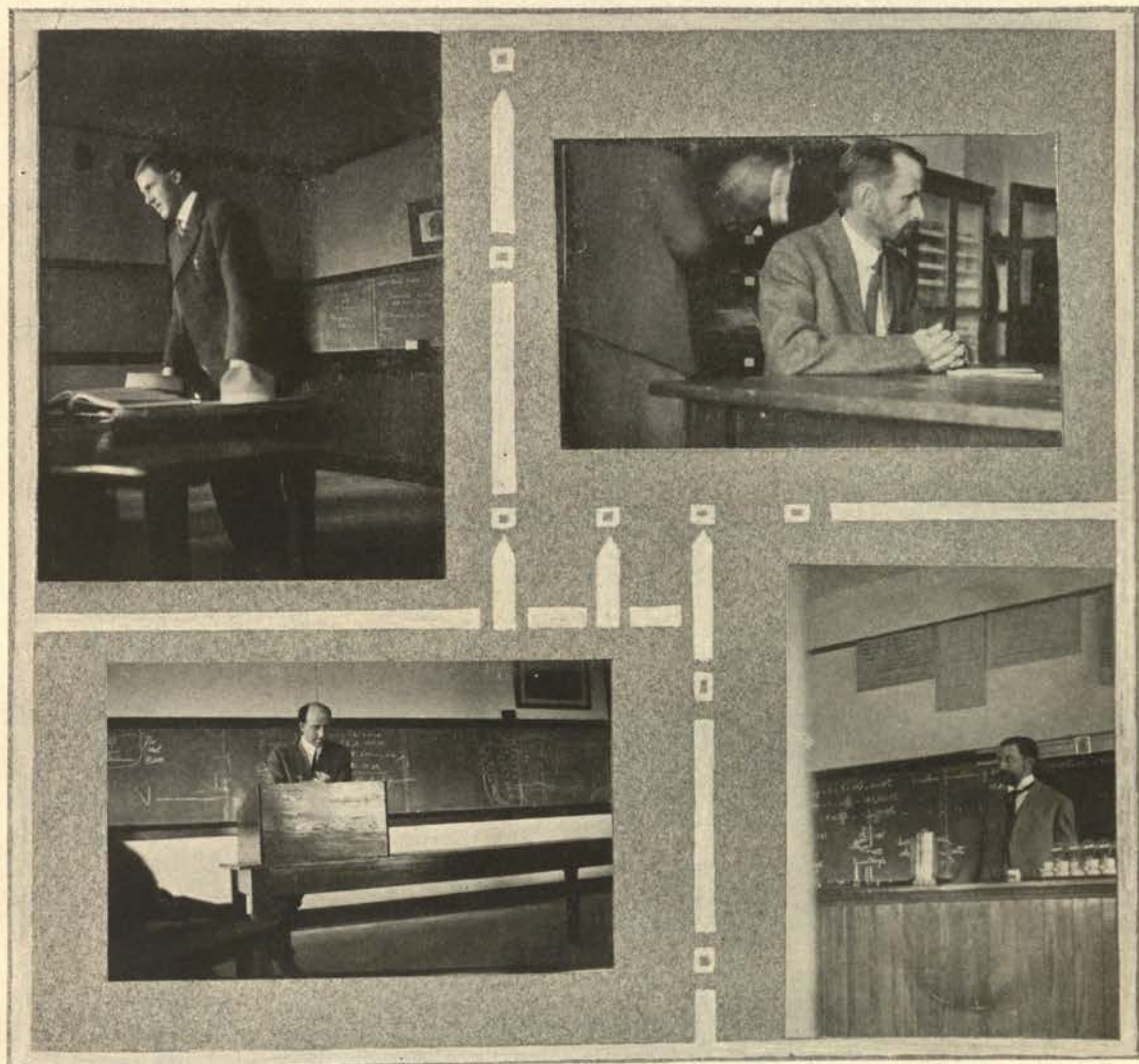
"The student has not followed the text."
 "I am justified in quizzing the student."
 "I urge the student to say what he means."
 "The student seems to appreciate the principle of least work."
 "The student strains at a gnat, then swallows a camel."
 "I urge and implore the student to read the text."
 "I keep begging the student."
 "It leaves me a bad impression of the student's qualifications as an engineer."
 "The student's discourse has a decidedly rhetorical ring."
 "I will allow the student a little more latitude."
 "The student has delivered an illuminating dissertation."





"PROFS"





"PROFS"





THE OZARK CHICKEN FARM
J. K. SHERRY Prop.



WILLMOTT
SALVATION
ARMY CAPTAIN



MURKIS
Popular Sportsman
and
Drink Water

GROSBERG
THE NOTED
EVANGELIST.



DR. BACH - ORATOR

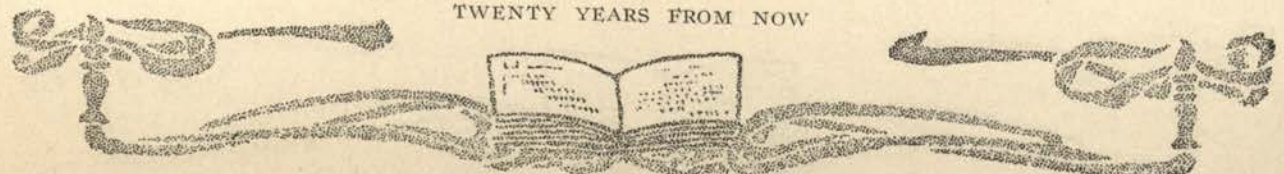


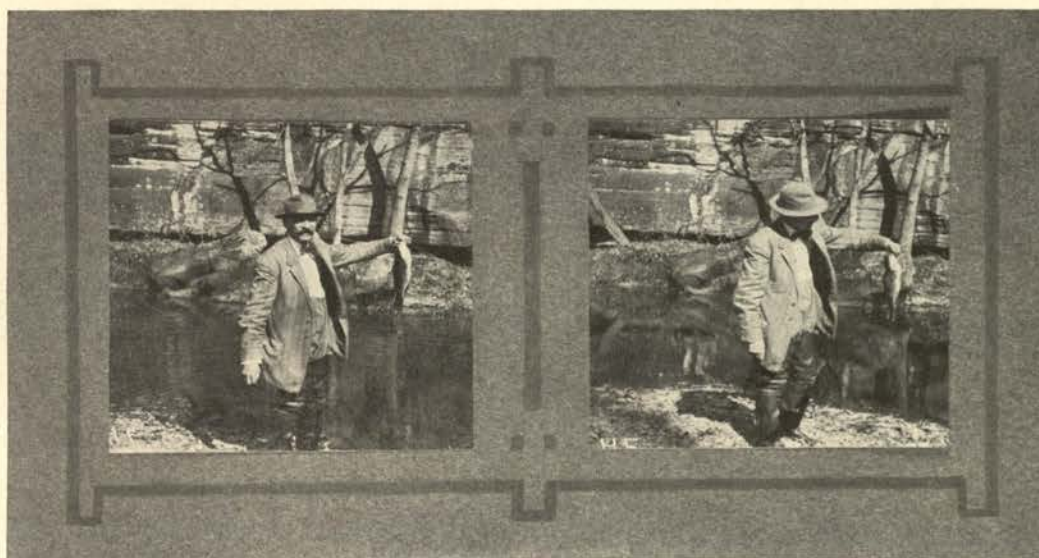
ADAMS - Instructor in
Structural Engineering



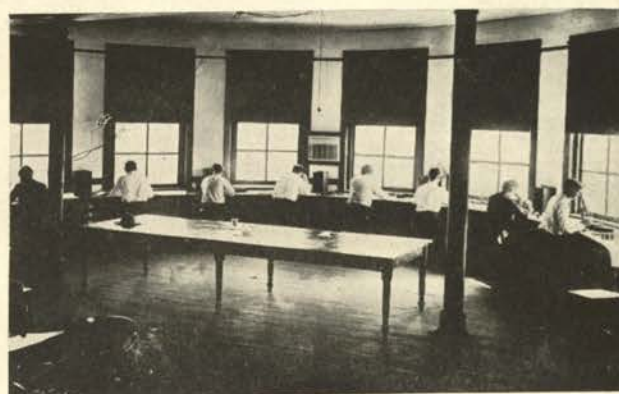
COASE AND HIS FAMOUS
BAND

TWENTY YEARS FROM NOW

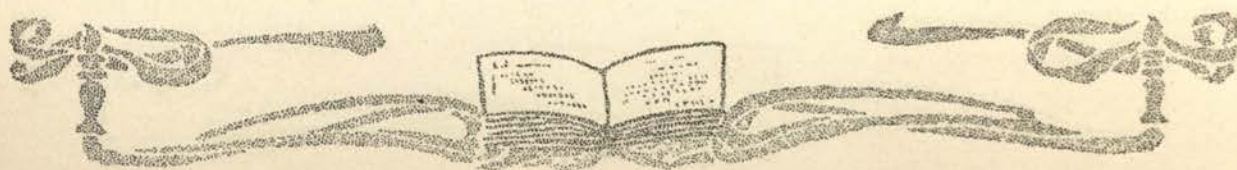


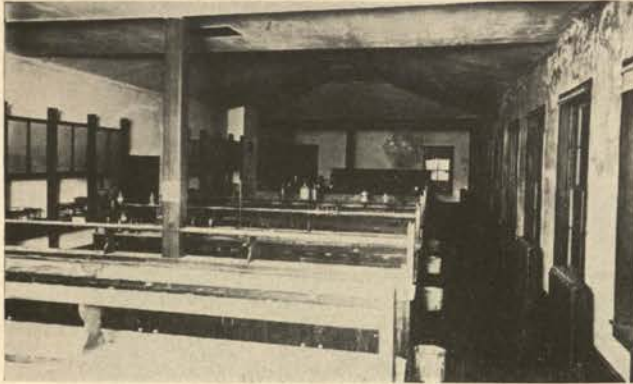


"A MAN OF DEEDS"



PETROGRAPHY





CHEMISTRY



PARKER HALL



FIELD





“Science Is Truth”

“Atomic weight is the period between molecular collisions.”

The “Periodic Law”—The elements are placed in order of their functions of different properties.

Deliquescence does not act vigorously. Efflorescent acts vigorously. Efflorescence is the substance passing water and turning to powder.

The composition of water by volume can be found by letting water freeze. When it freezes it leaves all solids and only the pure water freezes then you can find the composition by volume.

A physical change is a change in which the substance is not changed.

Synthesis is by the synthectic process. This method is more like a geometry problem.

Compound, two substances added together forming one chemical. Mixture, several substances which form different chemicals in the ore.

Phosphon burned in oxygen gave off a lavender gloom.

When we heat a substance, say water, all the moisture goes out of the water.

The variable constituents of the air are: phosphone, carbon, iodine and flourine.

The breaking point of a crusher is the point where the rock and the jaw of the crusher have the greatest pressure that is the point where the rock is crushed the greatest amount.

What is adhesion?

Adhesion is as a piece of vaseline in water is attached to another substance as to a glass rod, it will not stick to a candle.

Take sulphuric acid, for instance, and pour into water. We have vigorous action. The atoms try to jump a good deal like a grass-hopper.

Sulphur is mined by setting it on fire in large holes in the ground were enough air is only allowed for partial combustion.

Contact process, “The process consists of tanks and retorts.”

Running “over” means that the engine does not stop at the right place.

Running “over” means that the engine is doing more work than it was designed for.





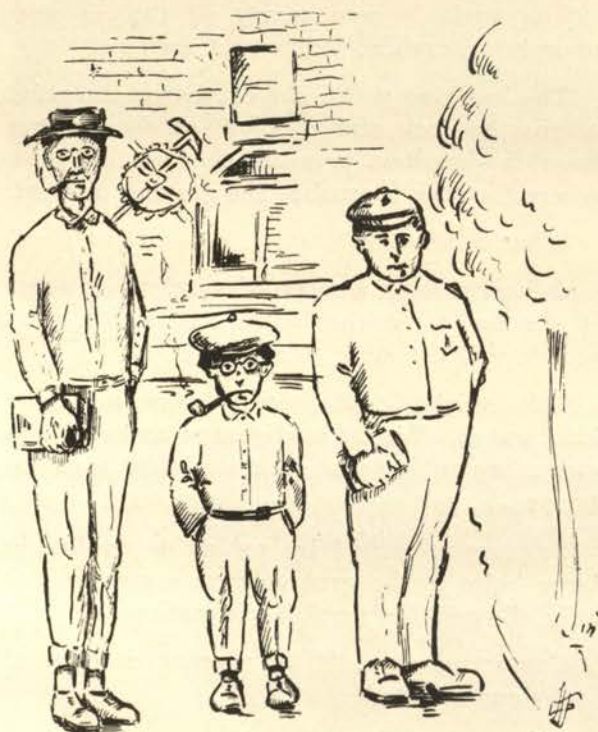
PYROTECHNIC.

"Now they claim the human body contains sulphur."

"In what amount?"

"Oh, in varying quantities."

"Well, that may account for some girls making better matches than others."



SOME-FRESH MATERIAL

It is difficult to say which the girls like better, the che-misters or the metallur-gents."

"What did Io die of?"

"Iodide of potassium."

First Student: Do you know Effie?

Second Student: Effie who?

First Student: Fe O.

"I heard you had some words with Bri."

"We had no words."

"Then what passed between you?"

"Nothing but one brick."

A mathematician named Dean
Is known to have lots in his bean.
Besides a large brain,
It is thought to contain
A fine integrating machine.

McNutt in Geology.—The waters first descended downwards, afterwards they ascended upwards and brought the ore with them.

Wanted—A student who is a stenographer to take down the clever sayings of Professor Copeland.

REVIEW OF SOME RECENT PUBLICATIONS.

1. The Transit as a Weapon of Defense. By Mark Sheffer.
2. Hopkins' Fraternity Directory, with a Chapter on the History and Aims of Sigma Nu. By James Hopkins.
3. A Practical Treatise on Library Science. By Roswell H. Maveety.
4. Deleterious Effect of Overwork. By B. Goss.
5. Handbook of Etiquette, or How to Move in the Best Society. By J. W. Shotwell.
6. Short Cuts in Structural Designing. By H. F. Adams.





The following letters show that the tedium of the Mining Experiment Station chemist's life is occasionally relieved by persons who, while they show undoubted lack of faith in his integrity and capability, no doubt cause him much more amusement than disappointment:

(1)

MARCH.....11.....1912....
mister young dear Sir your REports
received statin Nuthin in it i Want to let you
Know that i Know a Darne site better i had it
tested Bye other Chemists that whay i Know
now mister young your chemists Dont no ase
much ase a Boye 5 years olde ore you never
tested it wone ore the too now you can anser
this ore not gust ase you Plese about it.

Yours,

.....

(2)

This is marked for Oxyd of Zinc and Carbonate of Zinc with Cafmium.

(Sample contains nothing of value.—Chemist's report.)

Cadmium was found in carbonate of Zinc 1817 by Stronger. So this assays about \$62 per ton. this is the richest Zinc ore that has Been found in the Ozarks. If the School of Mines will send me some Rock eny debth I will tell you how deep it came out of the ground, send just a little piece of ore will tell

you how deep you got it don't make no difference where you got it. you can't addle me on Mineral, gold is metal itself most all metals are ore.

Yours

(Signed)

(3)

This is marked Mercury.....none.....
—Chemist's report.

Mercury is called Cloride or horn Silver it Resembles Wax, Vermilion is Sulphate of Mercury, Cinnabar is a red Brown with crystals formed in a metnomopis Rock it is formed near the Surface So your assaying don't amount to Very much, Obliged for your work I couldn't find anyone that would assay for us so I went at and Learned to assay so we can save you the trouble I have studied Chemistry and Geology for years I know where all metals lay If we send eny ore away it is always tested Before it leaves us

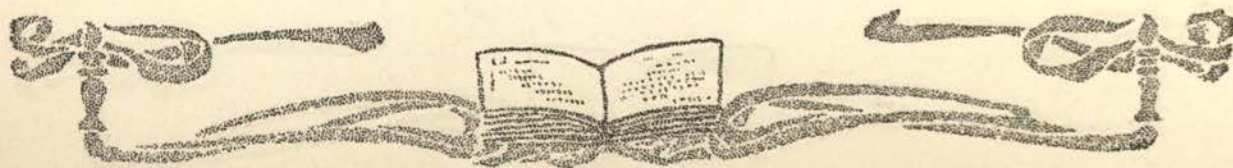
your Truly I remain your ever bearing
friend (Signed)

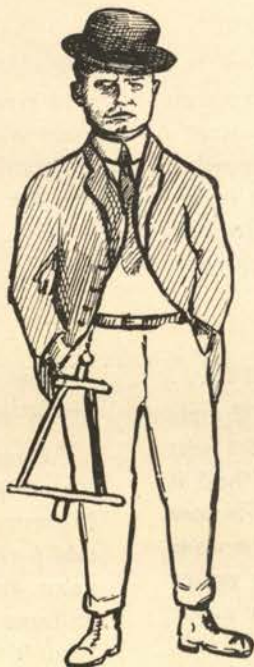
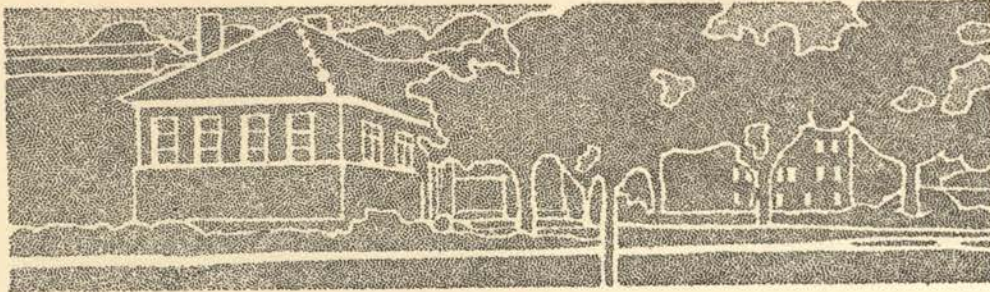
P. S. We would Be left if we didn't Do
our own assaying

(Signed)

P. S. I WILL CHALANGE THE
WORLD ON MINERALS

Good by
call and see me some day.
(Signed)





"SICKLY THE PRIDE OF TAU BETA PI"

Dr. Test (in Chemical Laboratory).—McCague, what becomes of zinc when it is put into hydrochloric acid?

McCague.—It gits et up.

Prof. Copeland.—Some furnaces slope outwards from the tuyeres to the top. Such an arrangement is all bosh. (Then he wondered why the student smiled.)

Apros the birth of a son to Dr. L. A. Test.

Have you heard the L. A. Test?

L. A. Test, what can it be?

The latest Test in chemistry.

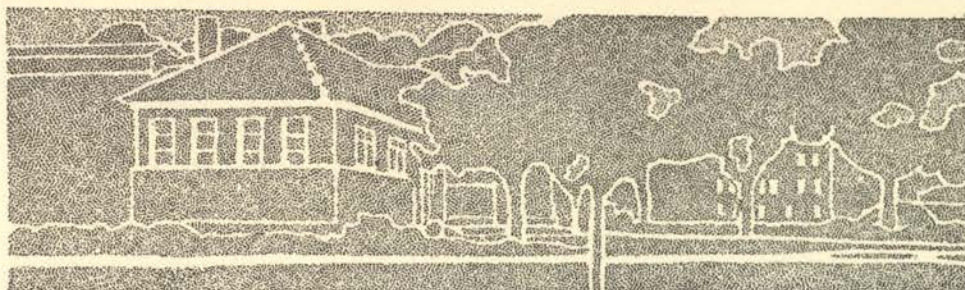
Now it's L. A. Test, Sr.,

Also L. A. Test, Jr.

You get results with either Test,

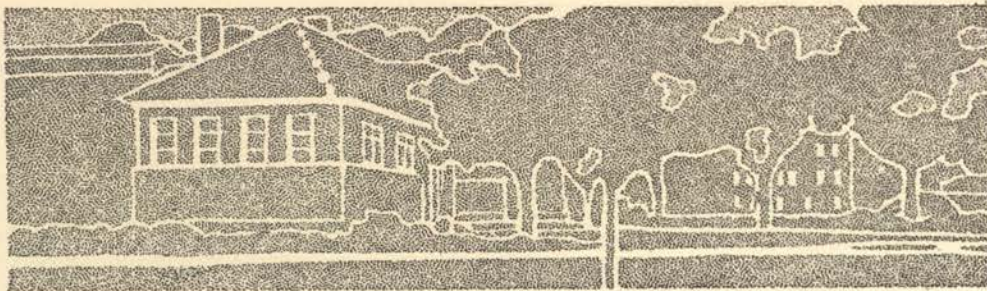
But the latest Test is best.





SAINT PAT IN ROLLA





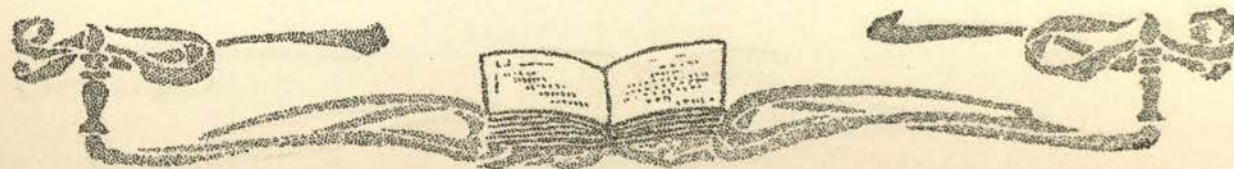
Alumni Directory

- Albertson, Maurice Merton, '11.....Rolla, Mo.
Assistant Geologist, Bureau of Geology and Mines.
- Alexander, Curtis, '84.....Garfield, Utah.
Utah Copper Company.
- Alexander, Raphael Currier, '03.....
- Alexander, Thompson, '01.....Albers Dock No. 2, Portland, Ore.
Union Bridge and Construction Company.
- Allen, Ernest James, '11.....Ray, Ariz.
Ray Consolidated Copper Company.
- Ambler, John Owen, '06.....Box 188, Cananea, Son., Mexico.
Assistant Superintendent Smelter, Cananea Consolidated Copper Company.
- Anderson, Hector George Sylvester, '08.....Cobalt, Ont., Canada.
Mill Superintendent, The Buffalo Mines, Ltd.
- Anderson, Perry Barton, '07.....
- Armstrong, Richard Edward, '08.....Pioche, Nev.
Manager, Pioche Assay Office.
- Baker, Arnold George, '07.....P. O. Box 104, Chouteau, Mont.
Baker & Ward, Irrigation Engineering.
- Baker, Charles Armstrong, '08.....Ely, Nev.
- Barrett, Edward Phillip, '09.....Wilburton, Okla.
Instructor in Chemistry, Oklahoma School of Mines.
- Bartlett, Albert Babbitt, '07.....Cheyenne, Wyo.
Consulting Mining Engineer.
- Barton, Robert Arthur, '06.....Vernon, B. C.
Resident Engineer, Municipality of Coldstream.
- Baueris, William Albert, '09.....432 Central Bldg., Seattle, Wash.
Assistant Engineer, Puget Sound Bridge and Dredging Company.
- Beach, James Keller, '11.....Ray, Ariz.
Ray Consolidated Copper Company.
- Bean, William Yantis, '78.....510 Pine St., St. Louis, Mo.
Inspector and Instructor, Grand Commandery Knights Templar of Missouri.
- Beard, John Warren, '09.....Alma, N. Mex.
Mine Engineer, Oaks Company.
- Bedford, Robert Hardy, '06.....Grass Valley, Cal.
Assistant Superintendent, North Star Mines.





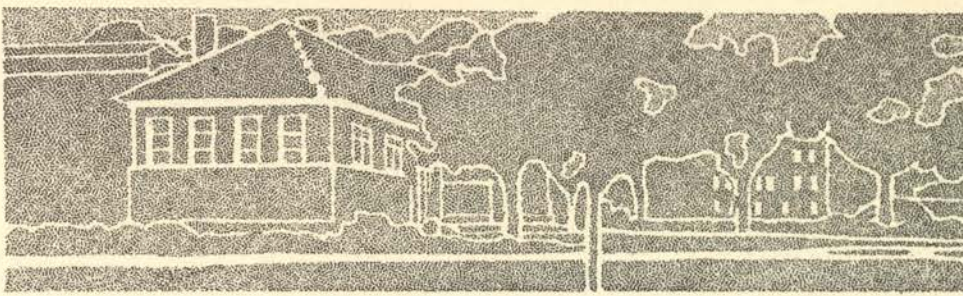
- Bell, Frank Rolla, '03..... Bartlesville, Okla.
Assistant Superintendent, Bartlesville Zinc Company.
- Benedict, Ralph Robert, '08..... 4143 State Line, Kansas City, Mo.
Construction Engineer, Board of Park Commissioners.
- Bingham, Raymond Alexander, '11..... Benton, Wis.
Wisconsin Zinc Company.
- Black, James Kennedy, '04..... Clayton, Mo.
Instructor in Chemistry, Washington University.
- Blake, Frank Orris, Jr., '10..... 524 C. W. Hellman Bldg., Los Angeles, Cal.
Superintendent of Refineries, El Oso Asphalt Company.
- Blake, True Walter, '11..... Hayden, Ariz.
Ray Consolidated Mill.
- Bland, George Vest, '04..... Sulzer, Alaska.
Acting General Manager, Alaska Industrial Company.
- Bodman, John Whittlesey, '10..... 6221 Monroe Ave., Chicago, Ill.
Fairbanks Company.
- Boland, Earl Frederick, '10..... 416 S. Crouse Ave., Syracuse, N. Y.
Contractor.
- Bowles, James Joseph, '10..... Lake Springs, Mo.
- Bowles, John Hyer, '08..... Lake Springs, Mo.
- Boyer, Fred Tete, '09..... Dixon, Ill.
Chemist, Sandusky Portland Cement Company.
- Boyer, George Hewitt, '08..... 4937 Parkview Ave., St. Louis, Mo.
- Boza, Hector, '11..... 403 S. Wright St., Champaign, Ill.
Graduate Student, University of Illinois.
- Branham, William Grover, '10..... Matehuala, S. L. P., Mexico.
Minas Dolores y Anexas.
- Brooks, John McMillen, '06..... Aptd. 25, San Matias, Guanajuato, Guan., Mex.
Assistant to Superintendent, Mexican Milling and Transportation Company.
- Brown, Joseph Jarvis, Jr., '05..... Wilburton, Okla.
Professor of Metallurgy, Oklahoma School of Mines.
- Brown, William Ernest, '07.....
- Brown, Wilton Rutherford, '78.....
- Buckby, Denard Wilson, '01..... Mullan, Idaho.
- Bunten, James, '10..... Canon City, Colo.
Bunten and Minor, Civil and Mining Engineers, County Surveyors.
- Burdick, Charles Adrian, '10..... Porcupine, Ont., Canada.
Manager, The Langmuir Night Hawk Lake Gold Mines, Ltd.





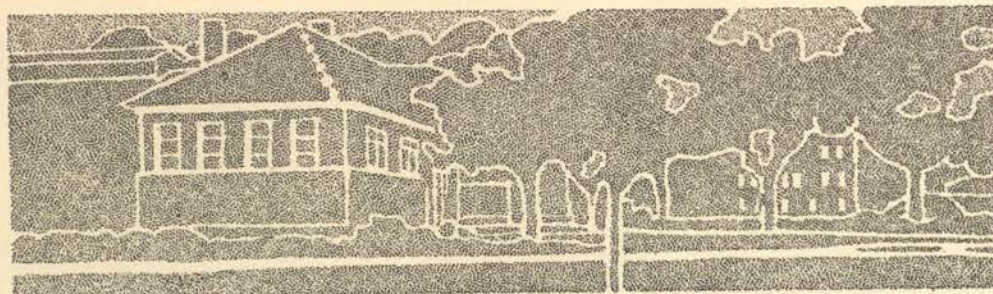
- Burgher, Mark Bernardi, '06.....Hannibal, Mo.
Civil Engineer.
- Buskett, Evans Walker, '95.....Joplin, Mo.
Metallurgist.
- Buskett, Mary Page, '93.....Seattle Heights, Seattle, Wash.
Teacher.
- Butler, Reginald Henry Brinton, '09.....60 Fernbrook St., Yonkers, N. Y.
Manager, United States Foil Company.
- Cameron, John Simpson, '97.....Lehigh, Okla.
Superintendent, Western Coal and Mining Company.
- Caples, James Watts, '05.....Salmon, Idaho.
Member, Lemhi Engineering Company.
- Caples, Russell Bigelow, Jr., '10.....Anaconda, Mont.
Metallurgical Chemist, Anaconda Mining Company.
- Carnahan, Thomas Samuel, '04.....P. O. Box 295, Tonopah, Nev.
General Manager, Tonopah-Liberty Mining Company.
- Carson, Arthur C., '80.....Butte, Mont.
- Cavazos, Enrique, '09.....Saltillo, Mexico.
- Chamberlain, Ernest Lorenz, '09.....309 Concert St., Keokuk, Iowa.
Civil Engineer, with Mississippi River Power Company.
- Chamberlain, Harry Carleton, '05.....Gila Bend, Ariz.
Cornelia Copper Company.
- Chamberlain, Santiago, '00.....
- Christopher, James Knight, '05.....317 Board of Trade Bldg., Kansas City, Mo.
- Clark, George Clough, '99.....919 E. Fillmore St., Phoenix, Ariz.
- Clark, John Charles, '11.....Bridgeport, Conn.
Representative, Sprague Meter Company.
- Clark, William Newton, '09.....Ottumwa, Iowa.
Engineer, Phillips Coal Company.
- Clarke, William Danels, '09.....1911 17th St., Bakersfield, Cal.
Chemist, Thompson Paving Company.
- Clary, John Henry, '05.....Wallace, Idaho.
Moore & Clary, Engineers and Assayers.
- Claypool, William M., '84.....Hollywood, Cal.
- Cody, Benjamin Horace, '11.....Clifton, Ariz.
Sampler, Arizona Copper Company.
- Cole, George W., '87.....
Deceased.





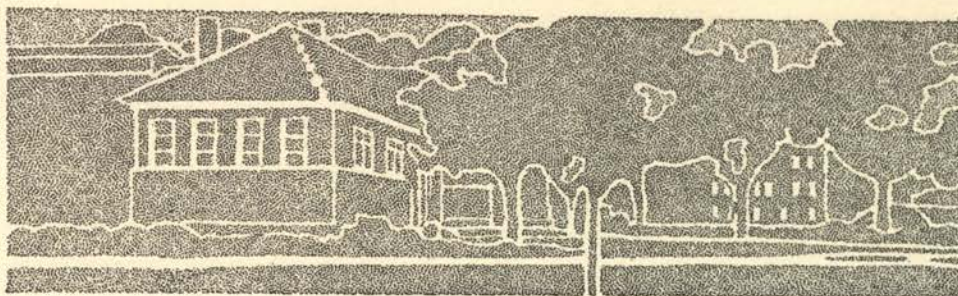
- Compton, James Crawford, '09.....Box 214, Salem, Ore.
Superintendent, Universal Construction Company.
- Connelly, Harry Wade, '10.....Box 63, Porcupine, Ont., Canada.
Superintendent, The Langmuir Night Hawk Lake Gold Mines, Ltd.
- Conrads, Ralph Augustus, '04.....Aptd. No. 47, Dists. De Tlacolula, Oaxaca, Mex.
Engineer, La Tapado Mine.
- Cook, Eldon Everett, '07.....Osborn, Mo.
- Cook, Paul Richardson, '07.....Rolla, Mo.
- Copeland, Robert Nathaniel, '11.....Galena, Ill.
Vinegar Hill Mining Company.
- Coppedge, Lindsay L., '78.....
Deceased.
- Cowen, Herman Cyril, '95.....Catskill, N. Y.
Treasurer, Catskill Supply Company.
- Cowles, Frederick Ragland, '01.....300 East 34th St., Kansas City, Mo.
University Preparatory School.
- Cowperthwaite, Thomas, '05.....Box 794, Warren, Ariz.
Engineer, Calumet and Arizona Mining Company.
- Cox, William Rowland.....165 Broadway, New York City.
Consulting Mining Engineer.
- Cullings, Jay, '86.....Pueblo, Colo.
Assistant Bridge Engineer, A., T. & S. F. and D. & R. G. R. R.'s.
- Cummins, Robert Patrick, '05.....3865 Page Ave., St. Louis, Mo.
Engineering Department, Frisco R. R.
- D'Arcy, Arthur Ignatius, '03.....
1200 Fullerton Bldg., St. Louis, Mo.
Assistant Engineer and City Surveyor.
Manager, Daily & Beckelheimer, Contractors.
- Davis, Floyd, '83.....5024 Page Ave., St. Louis, Mo.
Consulting Mining Engineer.
- Dean, George Reinald, '91.....Rolla, Mo.
Professor of Mathematics, School of Mines and Metallurgy.
- Dean, George Walter, '97.....4426a Gibson Ave., St. Louis, Mo.
St. Louis Smelting and Refining Company.
- Deegan, Francis J., '75.....
Deceased.
- Delano, Lewis Alfred, '04.....Bonne Terre, Mo.
Milling Assayer, St. Joseph Lead Company.





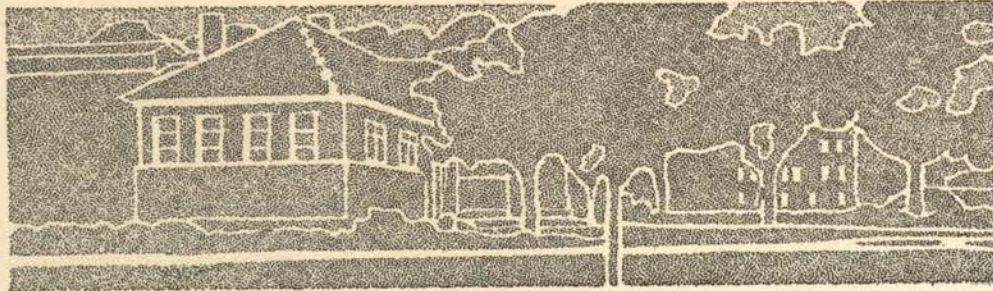
- De Lay, Theodore Stuart, '94.....Creston, Iowa.
Civil and Municipal Engineer.
- Detweiler, Alfred Nicks, '10.....Altoona, Kan.
Chemist, National Zinc Company.
- Detweiler, Milan Harrison, '11.....Mohrland, Utah.
Mining Engineer, Castle Valley Coal Mining Company.
- DeWaters, Roy Hayward, '09.....203 Pine St., St. Louis, Mo.
Secretary, Bishop-DeWaters Manufacturing Company.
- Diaz, Emilio, '10.....Sta. Rosa 48, Santiago de Chile, Chile.
- Dobbins, Walter, '10.....Garfield, Utah.
Utah Copper Company.
- Don, DeForrest, '09.....Arizpe, Son., Mexico.
Surveyor and Assayer, Minas Pedrazzini Company.
- Dosenbach, Benjamin Harrison, '10.....Hayden, Ariz.
Concentrator Foreman, Ray Consolidated Copper Company.
- Draper, James Clark, '01.....Chiantla, Guatemala, Central America.
Mine Manager.
- Dudley, Boyd, Jr., '08.....39 Hemenway St., Boston, Mass.
Graduate Student, Massachusetts Institute of Technology.
- Duncan, Gustavus A., '74.....Nelson, Nev.
Manager, Nevada-Eldorado Mines Company.
- Dunkin, Damon Duffield, '04.....Wilburton, Okla.
Professor of Mining, Oklahoma School of Mines.
- Dunn, Theodore Saunders, '10.....Diamond City, Alberta, Canada.
Engineer, Chinook Coal Company, Ltd.
- Dwyer, Edward P., '95.....110 E. 10th St., Joplin, Mo.
District Ore Purchasing Agent, Prime Western Spelter Company.
- Dyer, T. E., '94.....Rolla, Mo.
- Eardley, Albert Edwin, '97.....Carrizo Springs, Texas.
Contracting and Well Work.
- Easley, George Albert, '09.....Casilla 27a, La Paz, Bolivia, South America.
Superintendent, Olla de Ora Bolivian Gold Mining Company, Ltd.
- Elicano, Victoriano, '09.....Massinloc, Tambles, P. I.
- Elmore, Carlos Enrique, '11.....Galena, Ill.
Vinegar Hill Mining Company.
- Emerson, Cyrus, '76.....Pittsburg, Kan.
- Engelmann, Edward William, '11.....Garfield, Utah.
Utah Copper Company.





- Ericson, John Theodore Emanuel, '07.....1227 Caldwell St., Clairton, Pa.
Chemist, with Carnegie Steel Company.
- Fach, Charles Albert, '00.....Kirkwood, Mo.
Bonds and Stocks, Security Bldg., St. Louis, Mo.
- Farrar, Monroe, '11.....Edwardsville, Ill.
Engineer, Madison Coal Company.
- Fay, Albert Hill, '05.....Pittsburg, Pa.
U. S. Bureau of Mines.
- Fellows, Aubrey P., '07.....Collinsville, Ill.
In charge of Sublimed Lead Plant, St. Louis Smelting and Refining Company.
- Fernandez, Abraham Leonardo, '00.....Estacion Baca, Chih., Mexico.
Superintendent, Negociacion Minela, El Cigarerro.
- Florreich, Phillip, '95.....
Deceased.
- Flynt, Frank Le Roy, '10.....204 East First St., Maryville, Mo.
City Engineer.
- Forman, John Kavanaugh, '10.....511 Keller Ave., Bartlesville, Okla.
Chemist, Lanyon-Starr Smelting Company.
- Forrester, David Lawton, '11.....Flat River, Mo.
Engineering Department, Federal Lead Company.
- Foster, Leo Joseph, '04.....Montrose, Colo.
Office Engineer, U. S. Reclamation Service.
- Fowler, James Duncan, '08.....217 Reliance Bldg., Kansas City, Mo.
Superintendent of Construction, with Worley & Black, Consulting Engineers.
- Fraizer, Isaac Peter, '00.....Salt Lake City, Utah.
Consulting Mining Engineer.
- Fraser, Keith Colt, '10.....701 Keller Ave., Bartlesville, Okla.
Chemist, Lanyon-Starr Smelting Company.
- French, Charles Lewis, '08.....Room 315, City Hall, St. Louis, Mo.
Engineer in Sewer Department.
- Fulcher, James E., '86.....3110 Bowman Ave., Highland Park, Iowa.
Professor of Civil Engineering, Highland Park College.
- Gallaher, Phillip C., '84.....226 West 9th St., Leadville, Colo.
Chemist and Assayer, Iron Silver Mining Company.
- Garcia, John Adrian, '00.....McCormick Bldg., Chicago, Ill.
Vice-President, Brazil Block Coal Company.
Allen & Garcia, Consulting Engineers.





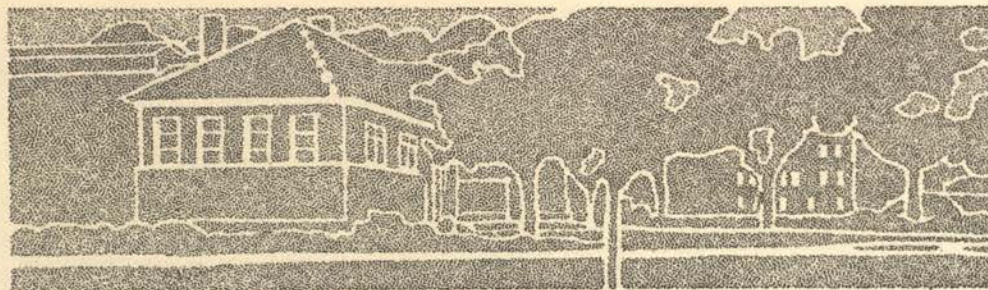
- Garcia, Germin, '11.....2 Loudres No. 23, Mexico City, Mexico, D. F.
Mexican Geological Survey.
- Gardiner, William Alexander, '06.....El Oro, Mexico.
Esperanza Mining Company.
- Garrett, Leon Ellis, '01.....Rolla, Mo.
Assistant Professor of Mathematics, Missouri School of Mines.
- Garst, Harvey Oden, '09.....Trenton, Mo.
City Engineer.
- Garvens, Oscar E., '76.....East St. Louis, Ill.
- Gibb, Frank W., '82.....Little Rock, Ark.
Gibb & Sanders, Architects.
- Gill, John Holt, '74.....
Deceased.
- Gill, William Harris, '03.....Bartlesville, Okla.
Superintendent, National Zinc Company.
- Gormley, Samuel James, '95.....Mount Vernon, Iowa.
- Gottschalk, Victor Hugo, '98.....Rolla, Mo.
Professor of Chemistry, Missouri School of Mines.
- Grabill, Lee R., '78.....Room 412, Municipal Bldg., Washington, D. C.
Superintendent of County Roads, District of Columbia.
- Greason, John D., '76.....
Deceased.
- Green, Cecil Theodore, '06.....Rosario, Son., Mexico.
Care of Minas del Tajo.
- Greenidge, Samuel Marshall, '02.....Apartado 344, Cananea, Son., Mexico.
Greenidge & Lee, Mining Engineers.
- Gregory, Clay, Jr., '10.....802 Wall St., Joplin, Mo.
Cooke-Gregory Construction Company.
- Gregory, James Albert, Jr., '05.....Dallas, Texas.
Contractor.
- Grether, Walter Scott, '06.....Rosiclare, Ill.
Assistant Superintendent of Construction, Rosiclare Lead and Fluorspar Company.
- Griffith, William Thomas, '06.....5204 Maple Ave., St. Louis, Mo.
- Grine, Harry Adam, '04.....419 Wright & Callender Bldg., Los Angeles, Cal.
General Superintendent, Gas Power Machinery Co.
- Grove, Claude Devlin, '94.....
- Guntley, Edward Anthony, '06.....3726 South Grand Ave., St. Louis, Mo.





- Hall, William Simpson, '09.....Pachuca, Hdgo., Mexico.
Superintendent, Guerrero Mill and Cyanide Plant, Cia. Real del Monte y Pachuca.
- Ham, Roscoe Conkling, '09.....Kansas City, Mo.
Foreman, North Park District.
- Hand, Horace Alonzo, '06.....Salt Lake City, Utah.
Mining Engineer.
- Hanley, Herbert Russell, '01.....Winthrop, Shasta Co., Cal.
Assistant General Manager, Bully Hill Mining and Smelting Company.
- Hare, Almon W., '75.....412 Hopkins Ave., Aspen, Colo.
Chemist and Assayer.
- Harlan, John Dee, '10.....Baldy, New Mexico.
In Charge of Stamp Mills, Maxwell Land Grant.
- Harper, Frank William, '08.....Fort Lauderdale, Fla.
- Harris, George William, '04.....Guanajuata, Mexico.
Peregrina Mining and Milling Company.
- Hartzell, Henry, '06.....Eldon, Mo.
- Hase, Herman Carl, '08.....Box 662, Globe, Ariz.
Foreman, Crushing Plant, Old Dominion Mining and Smelting Company.
- Hatch, William Peter, '07.....1010 West 39th St., Kansas City, Mo.
- Hatchett, Roger Hanson, '99.....P. O. Box 1154, Clifton, Ariz.
Chief Chemist, Arizona Copper Company.
- Hauenstein, Frederick, '03.....Tuscumbia, Mo.
- Heck, Elmer Cooper, '05.....Aptd. 98, Hermosillo, Son., Mexico.
Verde Grande Copper Company.
- Hendricks, James Otto, '99.....Seligman, Mo.
- Herdman, George Walker, '94.....2812 S St., Lincoln, Neb.
- Hinsch, Van Buren, '09.....Wilburton, Okla.
Instructor in Mathematics, Oklahoma School of Mines.
- Hirdler, Eva Endurance, '11.....Rolla, Mo.
Secretary, Missouri Geological Survey.
- Hoffman, Ray Eugene, '05.....Hannibal, Mo.
Superintendent Mines and Quarries, Atlas Portland Cement Company.
- Holmes, Oliver Wendell, '10.....Rolla, Mo.
Station Assistant, Mining Experiment Station.
- Horner, Preston King, '06.....Katanga, Congo Free State, Africa.
Tanganyika Concession, Ltd.
- Hoyer, Rudolph C., '79.....P. O. Box 763, Montgomery, Ala.
Chief Draftsman, U. S. Government.





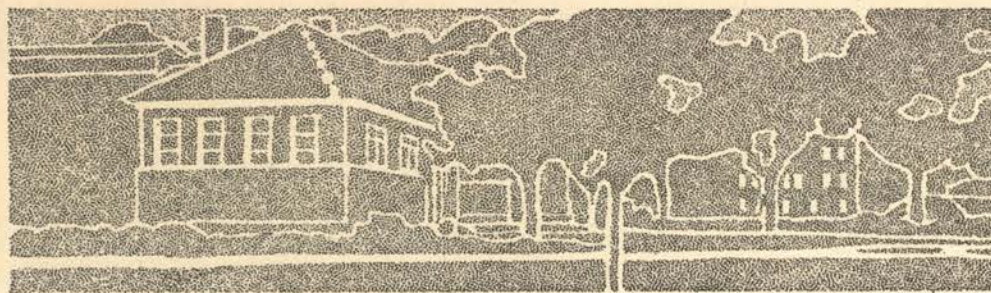
- Hughes, Victor Harmon, '09.....Rolla, Mo.
Geologist, Missouri Geological Survey.
- Hunt, Lamar Horatio, '05.....Pachuca, Hidalgo, Mexico.
Chief Chemist, Compania de Real del Monte y Pachuca.
- Hynes, Dibrell Pryor, '08.....1417 First National Bank Bldg., Chicago, Ill.
Mining Engineer, with H. L. Hollis.
- Illinski, Alexis Xavier, '10.....Rolla, Mo.
Chemist, Missouri Geological Survey.
- Jackling, Daniel C., '92.....Salt Lake City, Utah.
General Manager of the Utah Copper Company, the Ray Consolidated Company and the Chino Copper Company.
- Jochamowitz, Simon, '09.....Apartado 889, Lima, Peru.
Chief Hydrographer of the Peruvian Geological Survey.
- Johnson, Edward Mackey, '92.....Altoona, Kan.
Superintendent, Altoona Zinc Works.
- Johnson, Horace Asahel, '08.....Millers, Nevada.
Assayer and Chemist, Desert Power and Mill Company.
- Jones, Elston Everett, '08.....
Jones, Fayette Alexander, '92.....Room 4, Armijo Bldg., Albuquerque, N. M.
Consulting Mining Engineer.
- Karte, Anton Frederick, '11.....Saginaw, W. S., Mich.
Koenitzer Tanning Company.
- Kellogg, George Fred, '08.....Skidmore, Mo.
Assistant Cashier, The Bank of Skidmore.
- Keniston, Carl Winthrop, '09.....Box 42, Independence, Colo.
- Kersting, Felix John, '97.....Columbia, Mo.
Contracting Engineer, Missouri Valley Bridge and Iron Company.
- Kibe, Harry Clay, '09.....1911 Vine St., Davenport, Iowa.
- Killian, Ralph Daniel, '10.....Perryville, Mo.
- King, Charles Le Clair, '04.....Pachuca, Mexico.
Compania de Real Del Monte y Pachuca.
- Kirkham, John Edward, '95.....Ames, Iowa.
Associate Professor of Civil Engineering, Iowa State College.
- Koeberlin, Frederick Richard, '01.....
- Lachmund, Oscar, '86.....Salt Lake City, Utah.
Consulting Mining Engineer.
- Laizure, Clyde McKeever, '05.....Millers, Nevada.
Shift Boss, Desert Power and Mill Company.





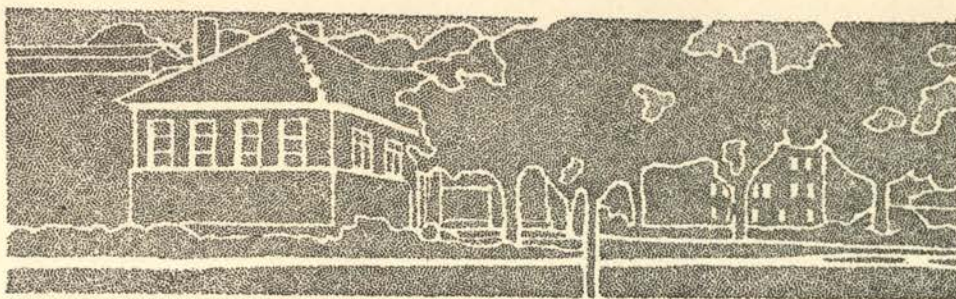
- Lehman, John Ludwig Gustave, '09.....
Lindau, Sam Paul, '11.....Kingman, Ariz.
Chemist, Arizona-Southwestern Copper Company.
Lintecum, Charles Lafayette, '05.....
List, Elmer, '10.....St. Francois, Mo.
Chief Chemist, National Lead Company.
Logan, Lewis Sublette, '03.....408 N. 11th St., St. Joseph, Mo.
Lohman, Henry William, '10.....Breckenridge, Colo.
Manager, Colorado Gold Dredging Company.
Long, James Carter, '07.....Victor, Colo.
Loveridge, Frank Richard, '09.....7802 Vermont St., St. Louis, Mo.
Chemist, Continental Portland Cement Company.
Lunak, Otto Allen, '11.....2443 S. Ridgeway Ave., Chicago, Ill.
Engineer, Water Surveys Department.
Luther, Walter Adams, '03.....St. James, Mo.
Lyman, George Edwin, '02.....Edwardsville, Ill.
Chief Mining Engineer, Madison Coal Corporation.
Lyneman, Felix Anthony, '08.....Box 712, Denver, Colo.
McCarthy, John Henry, Jr., '05.....6457 Florissant Ave., St. Louis, Mo.
McCrae, Rowe Francis, '09.....Hayden, Ariz.
Mill Foreman, Ray Consolidated Copper Company.
McElroy, William, '09.....Fort Scott, Kan.
Contractor.
McGoughran, James Edward, '11.....R. F. D. No. 1, Inglewood, Cal.
McGrath, John E., '76.....Washington, D. C.
Coast and Geodetic Survey.
McNutt, Vachel Harry, '10.....Rolla, Mo.
Instructor in Mineralogy, Missouri School of Mines.
Mackey, Robert William, '10.....Hayden, Ariz.
Ray Consolidated Copper Company.
Macomber, Sumner Cooley, '11.....Delano, Cal.
Foreman and Engineer, Central California Farms Company.
Mann, Horace Tharp, '08.....Rolla, Mo.
Instructor in Metallurgy, Missouri School of Mines.
Manwaring, Edgar George Ross, '05.....
Mapes, Harold Thomas, '08.....San Sebastian, Jalisco, Mexico.
Superintendent, The Novidad Development Company.



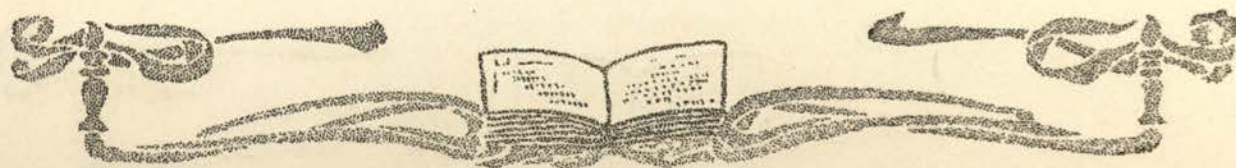


- Martin, Walter Guy, '96.....2615 Eudora St., Denver, Colo.
Metallurgist.
- Martinez, Carlos Efrin, '02.....Saltillo, Coah., Mexico.
Saltillo Light Company.
- Martinez, Justo G., '86.....
- May, Lawrence, '02.....1542 Union St., Schenectady, N. Y.
Metallurgist, General Electric Company.
- Mazany, Mark Stephen, '09.....Garfield, Utah.
American Smelting and Refining Company.
- Michael, Pearl Frederic, '09.....1200 Fullerton Bldg., St. Louis, Mo.
Draftsman, Brenneke & Fay, Consulting Engineers.
- Millard, Sallie E. (Mrs. Cornelius Roach).....Jefferson City, Mo.
- Miller, Christian R., '11.....Denver, Colo.
Sullivan Machinery Company.
- Millsap, Thomas H., '77.....
Deceased.
- Minger, William C., '76.....Idaho Springs, Colo.
Assayer, Chamberlain-Dillingham Sampling Company.
- Minor, Cyrus Edward, '04.....Box 393, Cananea, Mexico.
Cananea Consolidated Copper Company.
- Minor, Harmon Edwin, '10.....Harding Block, Canon City, Colo.
Bunten & Minor, Civil and Mining Engineers.
- Mitchell, Robert Bruce, '11.....Wilburton, Okla.
Instructor in Mining, Oklahoma School of Mines.
- Mix, Ward Barr, '08.....Hannibal, Mo.
Mining Engineer, Atlas Portland Cement Company.
- Moore, Frederick Arnold, '08.....Collinsville, Ill.
Assistant Superintendent, St. Louis Smelting and Refining Company.
- Moore, Stanley Ralston, '05.....Wallace, Idaho.
Moore & Clary, Engineers and Assayers.
County Surveyor for Shoshone County.
- Morgan, Glenn Beckley, '04.....Williston, N. D.
Mineral Surveyor, G. L. O.
- Morris, Edmund Hames, '02.....
Deceased.
- Mortland, Ernest Albert, '01.....St. Louis, Mo.
- Murphy, Benton Franklin, '10.....Bonne Terre, Mo.
Mine Surveyor, St. Joseph Lead Company.





- Murray, Edwin Phelps, '08.....
Nachtmann, Frank Xavier, '09..... Springfield, Mo.
Engineering Department, Frisco R. R.
Neer, Don Morgan, '08..... Box 226, Lometa, Texas.
Construction Department, Gulf, Colorado & Santa Fe R. R.
Nesbitt, William Corsey, '05.....
Neustaedter, Arthur, '84..... Ocampo, Chih., Mexico.
Manager, Compania Minera la Republica, S. A.
Norton, Benjamin Newton, '02..... Douglas, Ariz.
City Engineer and Building Inspector.
Nye, Alfred Leo, '08..... Pachuca, Hidalgo, Mexico.
Compania Real del Monte, Minas Barron.
Ohman-Dumesnil, A. H., '77..... 2553 Park Ave., St. Louis, Mo.
Physician.
Ohnsorg, Norman Lloyd, '10..... Kennett, Cal.
Engineering Department, Mammoth Copper Mining Company.
Olmsted, George Lewis, '01..... Herculaneum, Mo.
Chemist, Doe Run Lead Company.
Owen, John D. R., '85.....
Deceased.
Pack, James A., '77..... De Lamar, Idaho.
Pack, John Wallace, '74..... U. S. Mint, San Francisco, Cal.
Assistant Assayer, U. S. Treasury Department.
Painter, William R., '82..... Carrollton, Mo.
Editor of the Democrat.
Park, Albert, '10..... Alcova, Wyo.
Bartlett Engineering Company.
Perkins, Edwin Thompson, '99..... Granby, Mo.
Ore Buyer, Granby Milling and Smelting Company.
Perkins, Fred Hough, '99..... Flagstaff, Ariz.
Perkins, William Crutcher, '07..... Plattsburg, Mo.
U. S. Deputy Surveyor.
Peterson, Howard Kelsey, '10..... 321 Franklin Ave., New Rochelle, N. Y.
Civil Engineer.
Phelps, Tracy Irwin, '06..... Thistle, Utah.
Junior Engineer, U. S. Reclamation Service, Strawberry Valley Project.
Philippi, Paul Andrew, '08..... 5165 Maple Ave., St. Louis, Mo.
Designer and Estimator, Unit Construction Company.



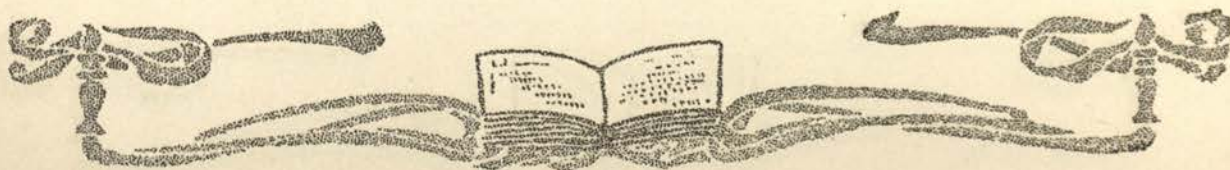


- Phillips, Walter Irving, '07.....Lynndyl, Utah.
 Pickering, John Lyle, Jr., '10.....Springfield, Ill.
 Pickles, John Lewis, '02.....Clifton, Ariz.
 Superintendent and Chief Engineer, Shannon-Arizona Railway Co.
 Pollard, Arthur Lewis, '09.....35 Bank St., Batavia, N. Y.
 Foreman of Forge Shop, Johnston Harvester Company.
 Porri, Louis Joseph, '10.....Main and Angelica Sts., St. Louis, Mo.
 Mississippi Glass Company.
 Porth, Harry W. L., '11.....Fairview, Nevada.
 Nevada Hills Company.
 Powell, Frank Bowman, '06.....Rolla, Mo.
 Lumber Merchant.
 Powell, Walbridge Henry, '01.....St. James, Mo.
 Lumber Merchant.
 Price, Evan Edmund, '04.....407 Newhouse Bldg., Salt Lake City, Utah.
 MacVichie & Price, Consulting Engineers.
 Price, John Morgan, '04.....Hesperus, Colo.
 Prugh, Julian Insko, '05.....Cromberg, Cal.
 Grizzly Gold Mining Company.
 Pudewa, Arthur Gustav, '11.....Rolla, Mo.
 Quinn, Matthew Vincent, '05.....Quartzburg, Idaho.
 Belshazzar Mining Company.
 Raj, Shiv, '11.....Care of P. C. Bank, Lahore, India.
 Randolph, Oscar Alan, '11.....Urbana, Ill.
 Instructor in Physics, University of Illinois.
 Reid, John Calum, '93.....Lethbridge, Alberta, Canada.
 General Manager, Chinook Coal Company, Ltd.
 Rex, Harry Noel, '02.....Douglas, Ariz.
 Rice, John Turner, '04.....Box 452, Imperial, Cal.
 Superintendent, Imperial Water Company, No. 2, and City Engineer.
 Richards, Walter Coffran, '11.....Webster Groves, Mo.
 Chemist, Curtis & Co. Mfg. Co., St. Louis, Mo.
 Riede, Frederick Edward, '10.....Austinville, Va.
 Assistant Superintendent, The Bertha Mineral Company.
 Rivera, Ramon, '06.....Guadalajara, Jalisco, Mexico, Aranzazu No. 116.
 Roesler, Herbert Arno, '03.....Rolla, Mo.
 Instructor in Metallurgy and Ore Dressing, Missouri School of Mines.
 Rogers, Herbert Fordyce, '99.....Holden, Mo.





- Rogers, John A., '03.....Bland, N. M.
Engineer, Cochite Gold Milling Company.
- Rolufs, Rulof Theodore, '01.....Herculeum, Mo.
Assistant Metallurgist, St. Joseph Lead Company.
- Ross, Beauregard, '82.....Suite 343 Railway Exchange Bldg., Denver, Colo.
General Manager of the Western Mines Development Company.
- Rucker, Ray Fleming, '06.....Mitchell, Ind.
Superintendent, Lehigh Portland Cement Company.
- Sandford, John Joseph, '08.....Kellogg, Idaho.
Engineering Corps, Bunker Hill and Sullivan Mining Company.
- Schmidt, Sidney Randolph, '10.....Tonichi, Son., Mexico.
Assistant Superintendent, The Mina Mining Company.
- Schrantz, Ashnah B., '82.....
Schroeder, John Severin, '04.....Morenci, Ariz.
Chief Chemist, The Detroit Copper Mining Company.
- Schultz, John Elmer, '10.....Chicago, Ill.
Sullivan Machinery Company.
- Schulze, Hermann Otto, '99.....Wonder, via Fairview, Nevada.
- Schulze, Eugene Victor, '03.....
Scott, John Bennett, '07.....Rolla, Mo.
Instructor in English, Missouri School of Mines.
- Seamon, Frank Hupp, '91.....P. O. Box 99, El Paso, Texas.
Assayer and Chemist.
- Sebree, John Payne, '07.....1607 South 40th St., Tacoma, Wash.
Assistant Superintendent, Hurley-Mason Company.
- Sedivy, Miles, '08.....Hayden, Ariz.
Ray Consolidated Copper Company.
- Seltzer, Andrew Jackson, '07.....Hanley, Saskatchewan, Canada.
- Shah, Aaron Max, '09.....Vilna, Russia.
- Shanks, John Dozier, '06.....St. Louis, Mo.
- Sheldon, Wilbur Elihu, '05.....Moab, Utah.
Resident Engineer, Spanish Valley Water and Land Company.
- Smith, Charles Dosh, '05.....Webb City, Mo.
Superintendent, Coahuila Mining Company.
- Smith, Duncan Slater, '11.....Kinchasa Congobelge, West Africa.
Forminiere Tele.
- Smith, Earl McColloch, '09.....935 Haight St., San Francisco, Cal.
Mining Engineer.



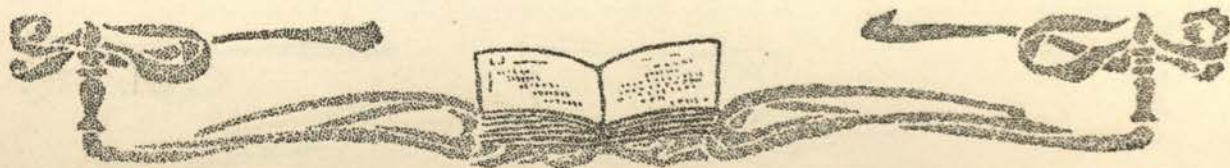


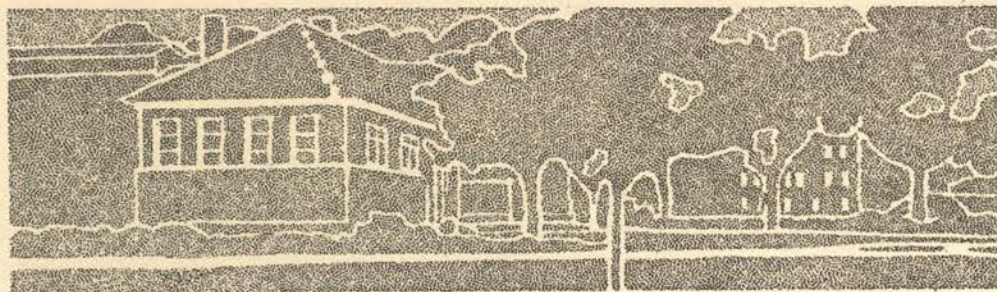
- Smith, Harvey Edson, '10.....West Frankfort, Ill.
Engineer, Dering Coal Company.
- Smith, Lorin X., '80.....Houston, Mo.
- Smith, Van Hoose, '10.....2110 Court St., Baker City, Ore.
Mining Engineer.
- Snyder, Byron John, '07.....Dahlonge, Ga.
Professor of Mining and Electrical Engineering, North Georgia Agricultural College.
- Soest, Walter Ernest, '99.....Santa Eulalia, Chih., Mexico.
Chemist, Chihuahua Copper Company.
- Spencer, Clifton Bates, '93.....Springfield, Mo.
District Engineer, St. Louis & San Francisco R. R.
- Spengler, Albert, '01.....2626 Holly St., Denver, Colo.
General Superintendent, National Construction Company.
- Sprague, Roy Elliott, '11.....62 Elizabeth St., Detroit, Mich.
Instructor Manual Training, Detroit High School.
- Stauber, Ignatius Joseph Henry, '01.....Silver City, N. M.
Superintendent, Savanna Copper Company.
- Steinmesch, Jesse Herman, '06.....Desloge, Mo.
Assistant Superintendent, Desloge Consolidated Lead Company.
- Stevens, John Vivian, '06.....Los Lunas, N. M.
Manager, Southwestern Irrigation, Land and Power Company.
- Stewart, Arthur J., '91.....Tecalitlan, Jalisco, Mexico.
Managing Partner, Stewart & Johnson.
- Stewart, John Sloan, Jr., '10.....Y. M. C. A. Bldg., Omaha, Neb.
Assistant Assayer, Walter T. Page.
- Summers, Edward B., '81.....Keokuk, Iowa.
Inspector, Mississippi River Power Company.
- Sunada, Sakuhei, '07.....143 Michigan Ave., Chicago, Ill.
- Taylor, Howard Joshua, '99.....6004 6th Ave., Seattle, Wash.
Deputy County Engineer, King County, Washington.
- Taylor, Joseph MacFerran, '05.....
- Tayman, Francis Joseph, '99.....
- Tedrow, Harvey L., '11.....Morenci, Ariz.
Sampler, Arizona Copper Company.
- Terrell, Arthur Davis, '98.....De Pue, Ill.
Superintendent Spelter Department, Mineral Point Zinc Company.
- Thomas, Alfred Augustus, Jr., '05.....Marionville, Mo.



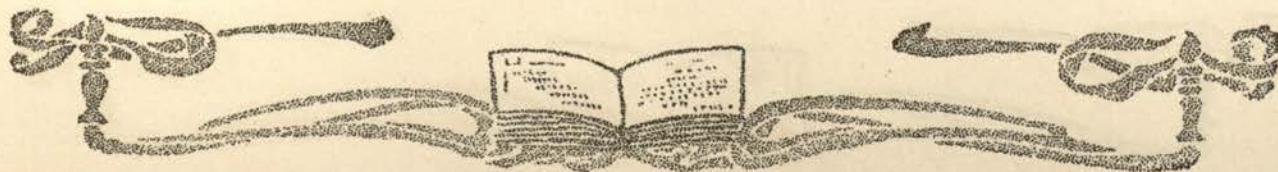


- Thomas, William Stephens, '94.....Mohrland, Utah.
Manager, Castle Valley Coal Mining Company.
- Thompson, Robert Clair, '04.....Wilburton, Okla.
Professor of Chemistry, Oklahoma School of Mines.
- Thompson, Reuben Conrad, '10.....Hurley, N. M.
Chino Copper Company.
- Thornhill, Edwin Bryant, '08.....Salmon City, Idaho.
Member, Lemhi Engineering Company.
- Torrence, Euart Carl, '98.....
- Townsend, Frank Edgar, '11.....Aguascalientes, Mexico.
Assayer, American Smelting and Refining Company.
- Traughber, Charles Weaver, '10.....Caliente, Cal.
Zenda Mining Company.
- Tseung, Tsik Chan, '07.....Yunnanfu, Yunnan Province, China.
- Tweed, Walter James, '04.....Houston, Mo.
- Tyrrell, Frank Lee, '93.....Salem, Mo.
Contracting Engineer.
- Underwood, Jerrold Roscoe, '99.....Granby, Mo.
Mine Operator.
- Van Devander, Herman Neff, '82.....Cedartown, Ga.
City Engineer.
- Van Frank, Phillip R., '85.....Little Rock, Ark.
Assistant Engineer, U. S. Government.
- Vitt, John Thomas, '07.....Salem, Ill.
Assistant Engineer, C. & E. I. Ry.
- Vogt, George C., '10.....1111 East Republican St., Seattle, Wash.
- Walker, John Perry, '11.....Herculaneum, Mo.
Assistant Superintendent, St. Joseph Lead Company.
- Walker, John Edward, '03.....Room 702, E. P. & S. W. Bldg., El Paso, Texas.
Engineer, El Paso & Southwestern System.
- Walsh, Francis Henry, '02.....
- Wander, Ernest, '10.....Waukon, Iowa.
Chemist, Missouri Iron Company.
- Wash, Edwin Richard, '07.....Dos Cabezas, Ariz.
Engineer, Mascot Copper Company.
- Watkins, Joseph Clarence, '01.....Rooms 301-2, Miners Bank Bldg., Joplin, Mo.
Manager, McDonald Land and Mining Company.



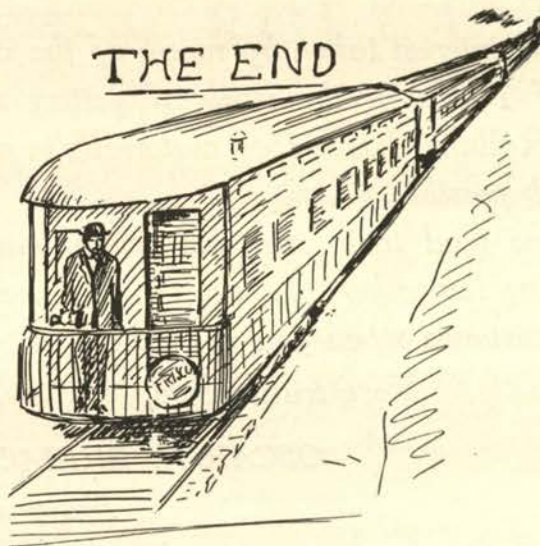


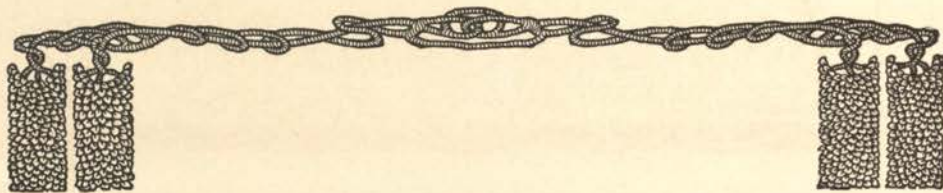
- Webster, Royal Sylvester, '03.....Havana, Cuba.
Havana Central Railroad.
- Weidner, Frank Hays, '03.....Collinsville, Okla.
Superintendent, Tulsa Fuel and Manufacturing Company.
- Weigel, William Melvin, '00.....State College, Pa.
Associate Professor of Mining, Pennsylvania State College.
- Wiles, George B., '87.....
- Wilfley, Clifford Redman, '05.....Hostotipaquillo, Jalisco, Mexico.
Cabrera Mines.
- Wilson, Albert Dyke, '02.....148 Rutger St., St. Louis, Mo.
Chief Chemist, The Laclede Gas Light Co.
- Wilson, Frank Lewis Leonard, '08.....Omaha, Neb.
Assistant Chief Chemist, American Smelting and Refining Company.
- Wilson, Fremont, '85.....Marion, Ind.
Surveyor of Grant County, Indiana.
- Wilson, Frank Walter, '84.....1126 Board of Trade Bldg., Boston, Mass.
Consulting Engineer.
- Winters, Charles F., '79.....Los Angeles, Cal.
Teller, National Bank.
- Wishon, A. Emory, '09.....Bakersfield, Cal.
Assistant General Manager, San Joaquin Light and Power Company.
- Wishon, Walter W., '81.....Austin, Nevada.
Austin-Manhattan Consolidated Mining Company.
- Wolf, Edgar Joseph, '09.....Care Piedmont Manganese Corporation, R. F.
D. 2, Concord Depot, Va.
- Woods, Clarence, '04.....Shawmut, Cal.
Manager, Gold Ridge Mine.
- Wood, Clyde Rex, '08.....Sheridan, Wyo.
County Surveyor and Engineer.
- Woodhall, George, Jr., '01.....
- Wright, Ira Lee, '07.....Leopold, N. M.
Mining Engineer, Savanna Copper Company.
- Wyman, William Charles, '06.....Ottumwa, Iowa.
County Surveyor. City Surveyor.
- Yeater, Merritt W., '86.....Sedalia, Mo.
Contractor and Civil Engineer.
- Zirulicka, Hyman, '08.....





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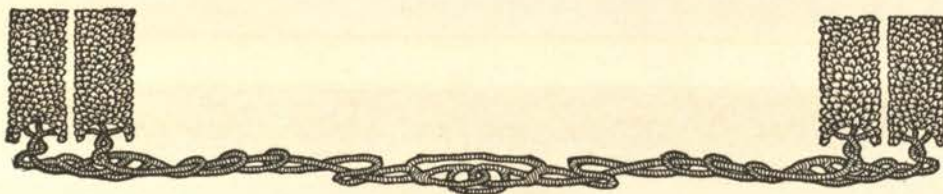
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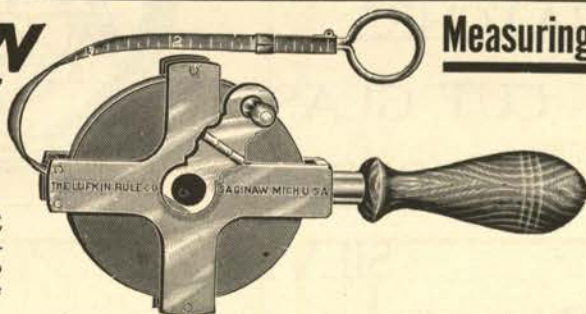
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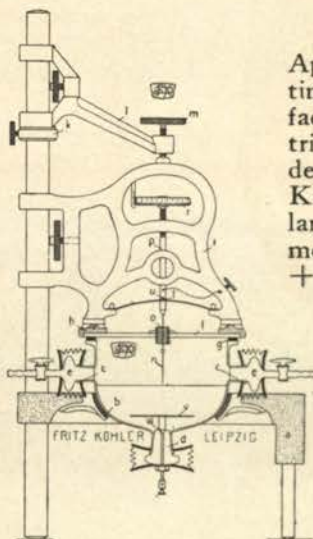
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